Yaupon Beach, North Carolina

North Carolina Coastal Area Management Act'

LAND USE PLAN, 1981

Adopted by the Board of Commissioners on May 12, 1981

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INTRODUCTION

The Coastal Area Management Act

"In recent years the coastal area has been subjected to increasing pressures which are the result of the often conflicting needs of a society expanding in industrial development, in population, and in the recreational aspirations of its citizens. Unless these pressures are controlled by coordinated management, the very features of the coast which make it economically, esthetically, and ecologically rich, will be destroyed."

In 1974, the North Carolina General Assembly passed the Coastal Area Management Act (CAMA) in an effort to effectively manage the development of twenty coastal counties. The Act notes that, "among North Carolina's most valuable resources are its coastal lands and waters. The coastal area, and in particular the estuaries, are among the most biologically productive regions of the state and the nation. Coastal and estuarine waters and marshlands provide almost 90 percent of the most productive sport fisheries on the east coast of the United States. North Carolina's coastal area has an extremely high recreational and esthetic value which should be preserved and enhanced."

Adoption of the CAMA empowered local governments in the twenty North Carolina coastal counties to exercise control over their future. The Act designs a state-local cooperative program in which local governments shall have the initiative for planning by preparing a blueprint for their future growth and development and the State Government shall establish Areas of Environmental Concern where lands are environmentally sensitive to the prospect of development. With regard to the planning, State Government shall have and advisory role, setting guidelines and standards and, and a reviewer's role, evaluating the local land use plans. In addition, the State makes grants to finance local planning and work jointly with local governments to enforce the adopted plans.

The CAMA permit process began March 1, 1978 throughout the entire coastal area of North Carolina. After this date, any development in an area of environmental concern requires a permit. The permitting process is divided into 2 classes; major permits for large scale developments, and minor permits for houses and other small structures. The major permitting process is administered by the North Carolina Department of Natural Resources and Community Development. The minor permitting process is administered locally by the Long Beach Building Inspector.

The entire CAMA planning process has been oriented towards citizen participation and has continually provided mechanisms for citizen input into the preparation of the land use plan. The primary input has taken the form of futrue growth policies and identification of existing problems and issues and desired future services. During the local planning process, efforts must be made to secure this public participation.

The land use plans which are prepared by local governments in the coastal area are distributed widely and have many uses. Among the users of the plans are local governments, regional councils of government, state and federal permitting agencies and public and private funding and development groups.

1. Local Government Uses - Counties and municipalities may use the local land use plans in their day-to-day business and in planning for the future. Often times, the land use plan provides guidance in local policy decisions relating to overall community development. The plans also provide the basis for development regulations and capital facility planning and budgeting. By delineating how the community wishes to grow, the land use plans help to assure the best use of tax dollars as public utilities can be extended to the best areas for growth.

2. Regional Uses - The regional councils of government or planning and development commissions use the local land use plans as the basis for their regional plans and in their function as regional clearinghouse for state and federal funding programs. The local plans can indicate to these regional decision makers what types of development the local community feels are important and where the development should take place.

3. State and Federal Government Uses - The local land use plans are used as a major component in the granting or denial of permits for various developments within the coastal area. The State and Federal agencies must be sure that their decisions consider the policies which are set out by the local governments in their plans. This is also true for decisions relating to the use of federal or state funds within the coastal counties. If a local plan sets out policies relating to various types and locations of development, the funding and permit decisions must be consistent with the local policies. Projects being undertaken by State and Federal agencies themselves must also be consistent with the local policies.

1981 Yaupon Beach Land Use Plan

The scope of the 1981 Yaupon Beach Land Use Plan includes a community profile, land use survey and analysis, and a land classification map. Specifically, a summary of data collected and its analysis, maps of existing land use and desired land use, Areas of Environmental Concern, assessments of current problems, and policy statements are presented. Because the 1980 United States Census has not yet been published, population figures for 1985-on are projections based on information from state and local sources. Therefore, some of the data presented should be updated with the publication of the Census, and it is possible that the data presented is deceptive, but it is not thought to be totally unrealistic.

In preparation of the Yaupon Beach Land Use Plan, several techniques were used to elicit input from the public in the planning process. These include local meetings with citizens and planners, a citizen survey, local weekly newspaper coverage, and a "dial-a-planner" service. The citizens have also been encouraged to comment on preliminary land use and land classification proposals. Significant comments have been incorporated in the final land classification map appearing in this plan. The public participation process for Yaupon Beach is explained in further detail in the text.

PART I

DATA COLLECTION AND ANALYSIS

PART I.
DATA COLLECTION AND ANALYSIS
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A. COMMUNITY PROFILE

Physical Setting

Yaupon Beach is located on Oak Island and comprises a total area of four hundred and fifty-four acres.

The town is bordered on the south by 0.7 miles Atlantic Ocean, on the north by 1.5 miles of marsh and inland waterway. The town of Long Beach borders on west and Caswell Beach on the east. Yaupon Beach is part of Brunswick County, also part of Smithville Township.

1. POPULATION

Introduction

The basis for most planning studies is the population, both current and projected, for the geographic area covered in the study. All planning services such as streets, police and fire protection, recreation, water, sewage, and garbage collection are related directly to the population they serve.

Yaupon Beach also has a seasonal population that must be considered along with the permanent population, for they too create demands on some services and facilities, especially water, sewer and roads.

Another factor to be considered is the density pattern. Typically, areas of population concentrations have a greater need for certain services, especially water and sewer, than areas of low density populations.

The historic population statistics show the change and trends that have and are occurring. The population of a given area is never static and change is always occurring. That is why planning is by necessity, an on-going process adjusting periodically as changes occur.

Therefore, it is the purpose of this section to provide the basic population data on which current and future needs for services and facilities and future permanent and seasonal residential land requirements can be determined.

Current Population

In 1970, Yaupon Beach was the fourth ranked population center of Brunswick County. By 1975, the town fell to fifth ranking sacrificing fourth place to Boiling Spring Lakes. Since 1975, Yaupon Beach has maintained its fifth ranking.

In 1970, the permanent population of Yaupon Beach was 355, and the seasonal population was 580. By 1975, the permanent population had grown to 522 and the seasonal to 853. This was a 47.33 percent increase for the permanent population, and a 47.07 percent increase for the seasonal. In 1980, preliminary Census figures shows that the permanent population increased to 538 and the seasonal to 1,029. From 1975 this was only a 3.1 percent permanent population increase and 20.63 percent seasonal population increase.

Another method of determining the growth of the town is by analyzing its growth as a percentage of Township and County populations.

Yaupon Beach is in Smithville Township which has approximately 19.1 percent of the County's population. In 1970, the population of Smithville Township was 4,346, making the Yaupon Beach permanent population 8.17 percent of the Township population at that time. In 1980 the population of Smithville Township had risen significantly to 9,000, with Yaupon Beach having 7.39 percent of that total.

In 1970, the permanent population of Yaupon Beach was 1.47 percent of the County's populations of 24,223. In 1975 Yaupon Beach was still 1.47 of a County population of 35,621, and by 1980, the City's permanent population was 1.41 percent of a County population of 38,100.

Historically, the seasonal population of Yaupon Beach has been nearly twice that of the permanent population. This ratio of 2-to-1 is below the ratios possessed by other beach communities in Brunswick County. For example, Caswell Beach has a ratio of nearly 7-to-1 and Holden Beach 28-to-1. This low ratio is probably due to the more family orientated atmosphere and the year-round facilities of the Oak Island Country Club. However, it is still important to consider this population seriously because of their demands for town services and their affect on the economy.

POPULATION CHANGE - 1970-1980

Year	Brunswick County	Smithville Township	Yaupon Beach Permanent	Yaupon Beach Seasonal
1970	24,223(+19.5%)	4,346(+29.5%)	355(N/A)	580(N/A)
1980	38,100(+57.3%)	7,274(+67.4%)	538(+36.9%)	1,029(+57.3%)

Sources: 1970-U.S. Census
1980-U.S. Preliminary Census Count, N.C. Dept. of Administration, Brunswick County Planning Department projections and the Southeastern Brunswick County 201 Facilities Plan.

On a township level, statistics are available concerning white/non-white population, household composition, population characteristics, and migration rates.

While the total population of Brunswick County increased by 18,862 from 1950 to 1980, the non-white population increased by only 4,465. Between 1950 and 1980, the percentage of non-white population dropped from 36.7 percent to 30.18 percent in 1980.

Of the 4,465 non-white increase, 2.073 were males and 2.392 were females. Percentage-wise, the non-white males in relationship to the total males dropped from 35.7 percent in 1950 to 29 percent in 1980, and the non-white females declined from 37.5 percent to 31.2 percent. It would seem that slightly more males than females migrated from the County but no natural increase statistics by sex are available to confirm this.

Townships statistics are available only for 1960 and 1970. Estimates for 1980 were made by the Brunswick County Planning Department.

Non-White Population Change by Township 1960-1970

	1960			1970			
	Total Pop.	Non-White	%Non-White	Total Pop.	Non-White	%Non-White	1960-197 Change
Brunswick Co.	20,278	7,175	35.3	24,223	7,443	30.7	268
Smithville Twp.	3,355	1,144	34.1	4,346	1,193	24.4	49

Non-White Population Change by Township 1980

	Total Population	Non-White	%Non-White	1970-1980 Change
Brunswick Co.	38,100*	9,335	24.5	1,921
Smithville Twp.	7,274	1,617	23.2	445

Household composition was also estimated for Brunswick County and Smithville Township. Analysis shows an approximate average household size of 3.47 for the whole County. The Township white household size is higher than that average for the County, and the Township non-white household size was smaller than that average for the County.

*A later preliminary 1980 Census county for Brunswick County of 35,349 was released by the U.S. Bureau of Census.

Township Household Composition 1980

	Brunswick County	Smithville Township
Total # Households	10,980	2,096
Household Population	38,100	7,274
Population per Household	3.47	3.47
# White Households	8,359	1,596
Household Population	28,765	5,657
Population Per Household	3.44	3.52
# Non-White Households	2,621	500
Household Population	9,335	1,617
Population per Household	3.56	3.32

Population Characteristics

The median age of a population, that is, the point at which half of the people are older and half are younger, gives a description of the age composition of a given population. The forces which normally act on the median age are births, deaths, and migration, and the complex interplay of these forces can drive the age either up or down. There is presently a nationwide trend toward lower birth rates, and this has caused the median age to rise slightly, since young people have become a lesser proportion of the total. From 1960 to 1970, each segment under study (male, female, black, white) grew older. The median age for all groups in Brunswick County was 26.4 in 1970 as opposed to 23.9 in 1960. In 1970, Smithville Township registered 32.4, while the North Carolina figure was 26.5. The reason for this difference appears to be that Smithville Township contains a relatively large population of elderly people (those over 65) within its boundaries.

POPULATION CHARACTERISTICS: 1970

	Total	Male	Female	White	Black	Under 18	Over 65	Med.Age
Brunswick Co.	24,223	50%	50%	69%	30%	37.4%	8.4%	26.4%
Smithville Twp	4,346	49%	51%	72%	26%	32.4%	12.1%	32.4%
North Carolina	5,082,059	49%	51%	77%	22%	34.6%	8.1%	26.5%

Source: U.S. Census, 1970

Estimates of population distribution by race, sex, and groups were also made for Brunswick County and Smithville Twonship for 1980 by the Brunswick County Planning Department.

1980 Population Distribution by
Race, Sex, and Age Group

	Brunswick County	Smithville Township
Total Population	38,100	7,274
Male	18,959	3,548
Female	19,141	3,726
White	28,765	5,657
Non-white	9,335	1,617
Median Age	28.4	N/A
Number Under 18	13,335	2.357
Number over 65	4,191	880

Migration Rates

Recent migration rates, Population characteristics and median age figures are not yet available for Yaupon Beach, Smithville Township, or the County. To create a general description of the population, 1970 Census figures are presented below. It is expected that this general description will change with the analysis of 1980 Census data. But, hopefully, the change will not be great.

Migration rates which were calculated for Brunswick County from 1960 to 1970 reflect the assumption that more and more of the County's people are staying in the County rather than moving out. A study done in 1969, for example compared specific age groups in 1950 with the same groups a decade later in order to measure the percentage of persons who had remained within the County during that period (e.g., ages 25-34 in 1950 campared with ages 35-44 in 1960). In every case Brunswick had shown a loss of residents, that is, less than 100% remained ten years later. From 1960 to 1970, the situation was altered significantly. Most age groups exhibited net gains (over 100%) during this span, and in each instance, the percentage of persons continuing to reside in the County was larger than during the previous enumeration. Although age breakdowns since 1970 have been unavailable, the reported substantial additions to the total population would lend support to the notion that currently, an even higher proportion of each age group is being retained These statistics tend to indicate that Brunswick County is becoming an increasingly attractive area in which to live and work.

MIGRATION RATES: BRUNSWICK CO. 1950-60-70

	0-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54
Age Groups in 1960	2441	2469	2417	1928	1125	2298	2509	2155
Same Group in 1970	2653	2320	1840	1542	1326	2634	2677	2320
Percent Remaining	109%	94	76	80	118	115	107	108
Percent Remaining 1950-1960	96%	81	54	61	81	94	92	88

SOURCE: Southport Population & Economy Study 1969 and Calculated from U.S. Census 1970.

2. YAUPON BEACH HOUSING

The current residential dwelling count for the Yaupon Beach planning area is 391 units. The majority of these residences are Single Family which total 303 or 77.49% of the total number of dwellings. Multi-Family residences accounted for 40 structures but 88 units, 22.51% of the total number of dwellings. The town has a total of 275 permanant residential dwellings and 116 Seasonal units. Only five homes are located on oceanfront property. All of the above housing is structurally sound. There are also 17 apartment units located in commercial establishments.

No mobile homes are currently located in Yaupon Beach. The Town's Zoning Ordinance restricts a mobile home park site to a minimum of five acres in a specific zoning district.

3. ECONOMIC REPORT

The economy of an area is constantly undergoing long term change. These changes affect the population in total numbers, in density, and therefore, the level of services required, as well as the economic well being of each person.

The density of an urban center is controlled by the extent and character of its productive and income-producing activity and its general vitality. That is, the urban economy conditions the amount of land development that occurs.

The elements of the economy must be considered as to their foundation, strength, stability, and future. While the total economy of an area contributes to the total picture, certain activities are considered to be more important. These are the primary basic economic activities. The stability and growth of Yaupon Beach depends directly upon the stability and growth of these economic activities.

For these reasons, an investigation of the economy is an important part of the planning process. But because the residents of Yaupon Beach depend upon outlying areas for their economic well being, the Town's economy must be considered in light of Brunswick County, and all of Oak Island.

The daily/weekly tourists have a choice of four motels with a total of 88 rooms, a total occupancy of 176 persons. Approximately one-fourth of these rooms are efficiency apartments.

Industry

Although Yaupon Beach does not contain any industrial development, such development in other areas of Brunswick County has its effect on the economy of the town and its general standard of living.

As Brunswick County has shifted from an agricultural/commercial fishing economic base to a more industrial base during the past decade, the economic well-being of the County's residents has improved. There are many indicators of this other than the census reports. One such indicator is per capita personal income. In 1973, the

the per capita personal income for Brunswick County was only $2,911. By 1978, it had risen to $5,071. Industrial development in Brunswick and New Hanover Counties has contributed to this increase in per capita income.

Manufacturing

The residents of Yaupon Beach depend on outlying areas and the entire Oak Island area for manufacturing employment. Many of these employ or provide services and materials for Beach residents. Below is a list of some firms in the Southport/Oak Island area.

Firm	Employment Range	Products	Year Established
Carolina Power and Light Company	250-499	Electrical Power	1975
Caroons Crab Company, Inc.	20-49	Fresh and Frozen Seafood	1965
East Coast Ice and Fisheries	20-49	Manufacture Ice	1975
Pfizer, Inc.	100-249	Citric Acid	1975
Sea-way Press	1-4	Commercial printing	1967
Standard Products of North Carolina, Inc.	20-49	Fish meal, fish oil, and fish solubles	1922
Woodcraft Cabinet Shop	1-4	Custom-made cabinets, misc. woodwork	

It is important to note that no new industries or firms have located in the Southport/Oak Island area since 1975, when Carolina Power and Light and Pfizer compainies located there. Both are major employers of Oak Island residents.

Fishing

Fishing is a major industry in the Southport/Oak Island area. Southport is the commercial and sport fishing center of the County, with the largest amount of registered/licensed fishing boats. This is significant since Brunswick County is one of the leading seafood producers in the state.

In addition, Yaupon Beach's oceanfront is used extensively for both net and surf fishing. The Yaupon Beach Fishing Pier is also a popular location for sport fishermen.

Agriculture

Agriculture activity in the nearby mainland and Oak Island area is almost nonexistent. In the 1976 Brunswick County Land Use Plan, it was reported that Smithville Township had so little agricultural activity, that all acres in agricultural use would be included in the Towncreek Township reports.

Tourism

The abundant natural resources of Yaupon Beach are responsible for attracting a large number of Seasonal visitors. In fact, tourism is perhaps the largest contributor to the economy of Yaupon Beach, although it ranks only third for the County. Many of the Town's commercial establishments rely heavily on the Seasonal population of not only Yaupon Beach, but Fort Caswell Baptist Assembly, Caswell Beach, and Long Beach, as well. Seasonal Commercial activity greatly affects the economy of the Town.

In 1974 each visitor to Brunswick County's beaches (no separate study was prepared for Yaupon Beach) spent an average of $4.66 per person, per day. Although this revenue contributes a significant amount to the economy of Yaupon Beach, it is a relatively low daily spending average for tourist areas in the region. Comparitively, visitors to the upper South Carolina coast (Myrtle Beach area) spent an average of $10.13 per day; the middle South Carolina Coast (Charleston area) spent $17.31 per day. Average statewide expenditures in 1973 were $14.14 per day.

The reason why Brunswick County's (and Yaupon Beach's) average was, and is so low is the lack of commercial spending opportunities. Substantially more revenue could be generated with further development as long as it is done in such a manner not to harm the natural resources that initially attract the tourist.

Commerce

The fourth largest occupation of Brunswick County residents is that of trade which includes all persons engaged in the sales of merchandise. Gross retail sales have risen steadily since 1973 for the County, with the greatest growth occurring since 1978. The annual increase, from 1978 to 1979 was as large as the total increase for the three-year period from 1973 to 1976.

Although individual retail figures for Yaupon Beach are not available, it is probable that the merchants have not received their proportional share of the County increases, due most probably to their failure to compete with other districts within the market area and the lack of spending opportunities as previously discussed.

For such a small town, there are a surprisingly large number of year round retail establishments in Yaupon Beach.

Finance and Real Estate

Activities of financial institutions, banks, and savings and loan associations have increased significantly in the past decade in the County. Oak Island has a number of real estate establishments and Yaupon Beach contains a branch of United Carolina Bank. Two commercial banks and two Saving & Loan Associations are located nearby Southport.

Other Commercial Activities

Three restaurants and four motels are located in Yaupon Beach. These establishments do not depend solely on summer tourist traffic since they are open year round. A fishing pier with a restaurant and arcade is open nine months of the year.

The daily/weekly tourists have a choice of four motels with a total of 88 rooms, a total occupancy capacity of 176 persons. Approximately one-fourth of these rooms are efficiency apartments.

Within the town limits is a portion of the Oak Island Country Club, which provides golf, tennis and swimming facilities.

B. LAND USE SURVEY AND ANALYSIS

INTRODUCTION

In 1980, a land use survey of Yaupon Beach was prepared. Before this date, no previous data was collected or recorded to determine acreage and land use increases and decreases as indicators of development trends and land use compatability relationships.

The 1980 land use survey serves four major functions: First, an accurate dwelling unit count is made available. Second, existing acreages for each land use category are determined. Thirdly, the designation of each parcel of land is given. From this process land use compatability relationships are determined. Fourth, and most important, the land use survey serves as the basis for an in-depth land use analysis. It will reveal, for example, the amount of unused but usable land available within the Town. This is an important consideration in shaping policies in matters of commercial and residential development, subdivision control, of facilities provisions and needs assessment and in the future, the establishment of zoning districts. The following analysis will deal primarily with the use of the land and the relationships of the various types of land uses.

EXISTING LAND USE

There are approximately 454 acres of land within the corporate limits of Yaupon Beach. Of this total, 264 acres or 58% percent are classified developed. Included in the developed classification are the following land uses: Permanent and Seasonal Single Family, Multi-Family Residences, Commercial, Recreation, Public Institution, and Transportation, Communication and Utilities. The following chart details total acreage and percentage of each existing land use.

a. Residential Land Use

The amount of land in Residential use in Yaupon Beach totals 94.71 acres or 35.99 percent of developed acreage. This acreage is subdivided into two cartergories: Single Family and Multi-Family. The largest number of dwellings is in Single Family at 393 units and 87.87 acres, accounting for 33.32 percent of the total developed acreage. Multi-Family dwellings comprise only 2.7 percent of the total developed acreage, 88 units, or 7.4 acres. In terms of the total acreage in Yaupon Beach, developed residential land comprises 20.9 percent.

b. Commercial Land Use

Approximately 18 acres of land are in commercial use in Yaupon Beach. They comprise 6.86 percent of all developed land or 3.99 percent of the total incorporated area. Included in this classification are restuarants, arcades banks, stores, service stations, motels, and offices.

c. Public Institutional Use

Included in this classification are the Town Hall and Ocean View United Methodist Church. Together they comprise 2.4 acres or 0.91 percent of the developed acreage and .53 percent of total acreage.

d. Recreational Land Use

The major recreational feature or Yaupon Beach is the 0.7 mile of public beach on the Atlantic Ocean, with the Town maintaining eleven street ends that abut the ocean for parking and beach access.

A large amount of acreage (37.7 acres) in Yaupon Beach is classified Recreation. A majority of this land is a portion of the Oak Island Country Club Golf Course, but aslo included is the Yaupon Beach fishing pier, two arcades, a tennis court and three swimming pools owned by local motels, and .7 of a mile of public beach frontage. Although the total recreational acreage comprises 14.30 percent of the developed acreage and 8.3 percent of all acreage, the Town owns no land specifically for use as a recreational area.

Eleven street ends, six of which are paved, abut the ocean strand and are maintained by the Town for parking and beach access.

e. Transportation, Communication and Utilities

Included in this classification are the water pumping stations, water tower, and streets. Combined there are a total of 110.58 acres or 41.94 percent of the developed acreage and 24.36 percent of total acreage.

Yaupon Beach Existing Land Use

Land Use	Approximate Number of Units	Average Acreage Per Unit	Total Acreage	Percentage of Developed Acreage	Percentage of Total Acreage
Single Family	303	.29	87.87	263.69	19.36
Multi-Family	88(40 structures)	.08	7.04	2.67	1.55
Commercial*	45	.40	18.1	6.86	3.99
Public Institution	2	1.20	2.4	.91	.53
Recreation	NA	NA	37.7	14.30	8.31
Transportation, Warehousing, Communication, and Utilities	NA	NA	110.58	41.94	24.36
Subtotal	438	.37	263.69	100%	58.10
Undeveloped Platted Acreage	NA	NA	187.47	NA	41.31
Undeveloped Unplatted	NA	NA	2.7	NA	.59
Total	438	.3	453.86	NA	100.00

*Commercial enterprises may contains some auxiliary housing

2. DEVELOPMENT TRENDS

a. Land Use Compatability Problems

Many possible land use compatability problems in Yaupon Beach have been avoided through the adoption and enforcement of the amended Yaupon Beach Zoning Ordinance and map of February 12, 1980.

However, within the districts established by the Ordinance, there may exist structures and uses of land and structures which were lawful before the Ordinance was adopted but which would since be prohibited, regulated, or restricted under the terms of the Ordinance. The Ordinance permits these non-conformities to continue, but in no case expand except that a nonconforming use may be granted a variance upon application to the Yaupon Beach Board of Adjustment.

The nonconforming uses in Yaupon Beach are in the form of a few multi-family uses in single family zones, one commercial establishment in a residential zone, and building setbacks.

b. Loss of Oceanfront Lots

CAMA in combination with the Yaupon Beach Zoning Ordinance governs further oceanfront construction in Yaupon Beach. CAMA requires a 140 set back from the first line of stable vegatation. The remaining vacant oceanfront lots in Yaupon Beach are no longer deep enough, as a result of erosion, under these regulations to be buildable.

c. Lack of Unincorporated Land

Yaupon Beach is one of three municipalities on Oak Island. The entire island is now incorporated into or under the jurisdiction of Long Beach, Caswell Beach; Yaupon Beach, the Coast Guard station or the Baptist Assembly.

Because Yaupon Beach is located at the center of the island, the Town has absolutely nowhere it can extend its boundaries of 454 acres on the island. Therefore, all future growth on the island will increase the density of the Town rather than increase its total area.

3. MAJOR PROBLEMS RESULTING FROM UNPLANNED DEVELOPMENT

Yaupon Beach has undergone a significant amount of development since 1970, with a large number of new dwelling units and a large population increase. Until April, of 1974, with the adoption of the Yaupon Beach Zoning Ordinance, this growth occurred without regulation or proper planning. As a result, Yaupon Beach has some land use problems.

One problem, strip commercial development, has occurred with improper designs on Yaupon Drive and is now developing along Ocean Drive. Commercial development in these areas has occurred without adequate setbacks, without properly designed egress and ingress and without adequate off-street parking.

It is realized that certain types of commercial development can sustain itself only adjacent to major traffic arteries. When development occurs adjacent to major thoroughfares, it must be designed so as to not inhibit the flow of traffic and cause congestion and hazardous situations on these roads.

Another problem has resulted from earlier lack of guidance to development. A large number of very small lots were platted, and many have been sold off individually. These lots are too small for septic tanks. Were these individually owned lots to be built on for occupancy prior to the provisions of traditional sewerage facilities, serious health problems may result, as well as pollution of surrounding waters with adverse impact on the fishing industry and the tourist economy. A wastewater treatment system meeting state and federal standards is being designed for this area of the County known as the Southeastern 201 Study. If this plan is approved at the state and national levels and funds accordingly provided to implement it, the County would then be in a position to offer to Yaupon Beach at some time in the future the opportunity of tying onto this sewer system.

4. AREAS OF ENVIRONMENTAL CONCERN

Yaupon Beach's primary assets are its natural resources. Many of these resources are classified as Areas of Environmental Concern by the Coastal Area Management Act of 1974 in an effort to preserve and protect them.

The tourist and fisheries industry of the Yaupon Beach area are directly dependent on the preservation of the Areas of Environmental Concern in Yaupon Beach. To some extent, these two economic activities compete for the use of the same resources. A balance must be maintained between the growth of both activities or the livelihood of the area could be in jeopardy.

Another problem is that a great deal of development has occurred in the ocean beach areas where there has been extensive erosion problems. Also, some land has been developed along the estuarine shoreline but it has caused no significant problems.

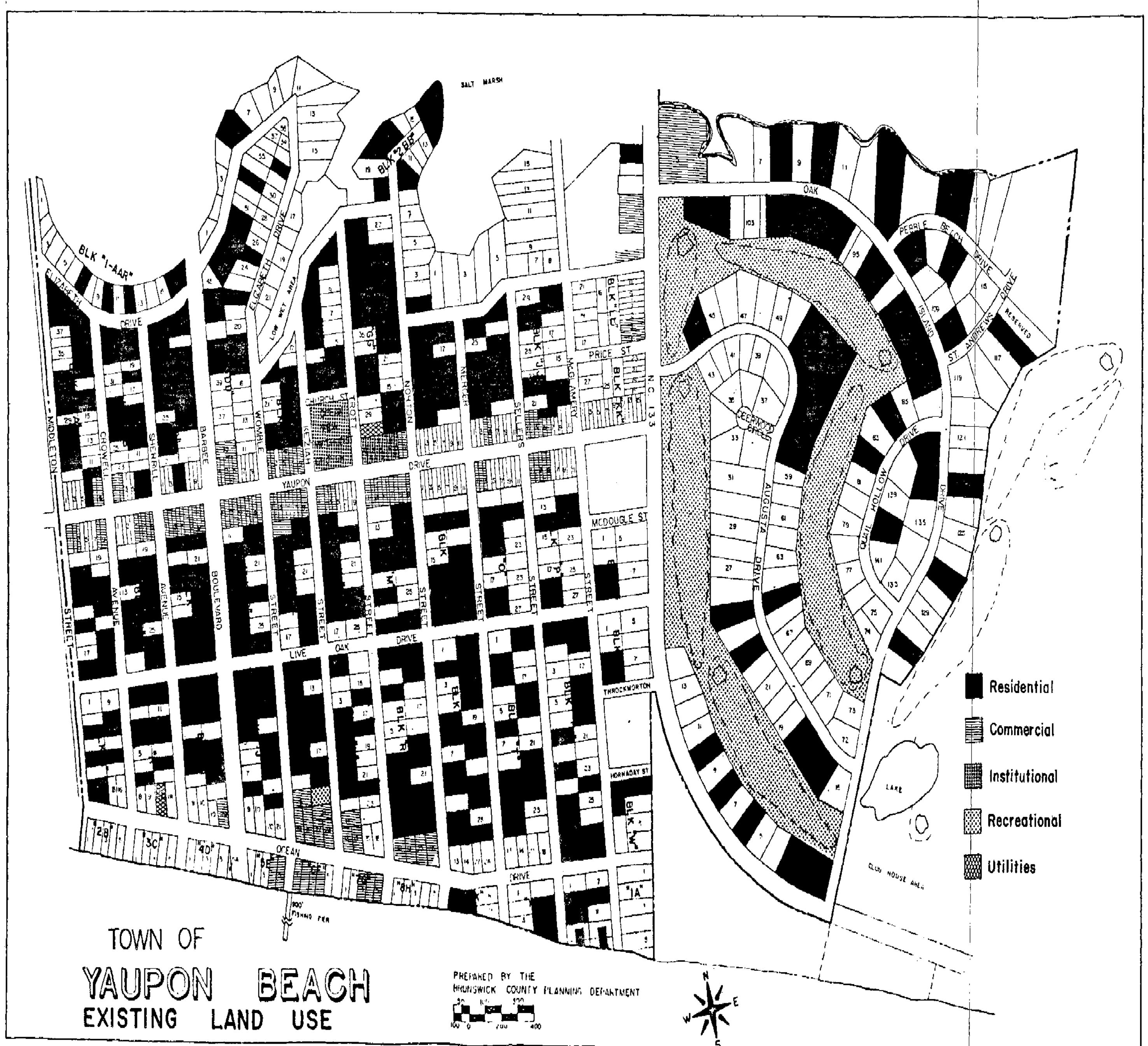
Of the AEC's designated by CAMA, Yaupon Beach contains the following: Coastal Wetlands, Estuarine and Public Trust Waters, Ocean Beaches, Renewable Resource Areas, Natural Hazard Areas, and Cultural Resources. For a detailed description of these areas, see the section entitled "Fragile Areas".

5. EXISTING PLATTED LOTS

Almost all land (99.4 percent) in Yaupon Beach is platted. Approximately 178.7 acres of this land or 39.38 percent of the total acreage is undeveloped. It is doubtful the remaining 2.7 acres of unplatted land is suitable for development.

The average lot size in Yaupon Beach is .37 acres. Permanent Single Family dwellings sit on lots that average about a third of an acre in size. Seasonal Single Family sites are slightly smaller, averaging about a quarter of an acre each. Multi-Family units average much smaller lots (.08 acre) per dwelling.

All development in Yaupon Beach is provided with public water, but are not presently served by public sewer.


TOWN OF
YAUPON BEACH
EXISTING LAND USE
PREPARED BY THE
BRUNSWICK COUNTY PLANNING DEPARTMENT
Residential
Commercial
Institutional
Recreational
Utilities
SALT MARSH
MIDDLETON
STREET
CROWELL
AVENUE
SHERRILL
AVENUE
BARBEE
BOULEVARD
WOMBLE
STREET
YAUPON
DRIVE
LIVE OAK DRIVE
OCEAN
DRIVE
ELIZABETH DRIVE
LOW WET AREA
CHURCH ST
TROTT
NORTON
MERCER
SELLERS
McGAMERY
PRICE ST
N.C. 133
McDOUGLE ST
THROCKMORTON
HORNADAY ST
OAK
PEBBLE BEACH DRIVE
ISLAND
ST ANDREWS DRIVE
AUGUSTA DRIVE
QUAIL HOLLOW DRIVE
LAKE
CLUB HOUSE AREA
RESERVED
900' FISHING PIER
N
E
S
W

C. CURRENT LAND USE REGULATIONS

1. YAUPON BEACH LOCAL LAND USE CONTROLS

(a) Zoning - The Yaupon Beach Town Council adopted a zoning ordinance and map in April, 1974, and amended Feb.,1980, that applies throughout the corporate boundaries of the Town. The Town Building Inspector administers the ordinance. Enforcement is provided primarily through the withholding of building permits for proposed construction that does not comply with the zoning ordinance. The zoning ordinance provides for the establishment of a Board of Adjustment to be appointed by the Town Council. The Board of Adjustment acts to interpret the zoning ordinance and also to consider special exceptions and variances to the ordinance. Changes in zoning are provided for through procedure for application to the Planning Board for an amendment to the zoning ordinance or map, whose recommendation is then carried to the Town Council for action.

(b) Subdivision Ordinance - The Town of Yaupon Beach adopted a subdivision ordinance in February, 1974 which again applies throughout the corporate area of the Town. This ordinance requires the preparation of both preliminary and final plats which both must be reviewed by the Town Planning Board and recommended to the Town Board of Commissioners. The final plat approval is required of the Town Board of Commissioners.

Criteria for approval set forth in the ordinance includes required improvements to be provided by the developer (water lines and street preparation and paving) and compliance with Town plans. Enforcement of the ordinance is provided through the County Register of Deeds. No plat for a new division of land in Yaupon Beach (requiring approval under the ordinance) may be recorded until approved by the Town Board of Commissioners.

(c) Building Codes - The Town of Yaupon Beach is presently enforcing three portions of the State Building Code including the General Construction (Building) code, the plumbing code and the electrical code. The Town Council employs a building inspector. He enforces the Building Code and is responsible for the issuing of building permits and performing inspections to insure compatability of construction with the code. He also serves as the Town's CAMA minor permit officer. The plumbing and electrical codes are enforced by the County's inspectors.

The County Board of Health has impact on whether building permits can or cannot be issued because approval of setic tank installation is a prereguisite to issuance of a building permit.

(d) Land Use Plan - Yaupon Beach is presently undergoing the C.A.M.A. Land Use Planning process towards the adoption of the Yaupon Beach Land Use Plan. The Plan will be adopted in the Spring of 1981.

2. STATE AND FEDERAL CONTROLS

This section lists State and Federal land use related controls. The agencies that these controls have stemmed from are the Department of Natural Resources and Community Development (Division of Environmental Management), the Department of Natural Resources and Community Development (Office of Coastal Management), the Department of Natural Resources and Community Development (Division of Earth Resources) the Department of Natural Resources and Community Development (Secretary of NRCD), the Department of Administration, the Department of Human Resources, the Department of Cultural Resources (Division of Archives and History), the Department of Defense (Army Corps of Engineers), the Department of Transportation (Coastal Guard), the Department of Interior (Geological Survey Bureau of Land Management), the Nuclear Regulatory Commission and the Federal Energy Regulatory Commission.

The controls cover all areas of land use development and management including water and sewerage facilities, ground water, air and water pollution, construction guidelines in areas of Environmental Concern and dredging and filling, dams, mining erosion control, Historic and archeological sites, bridges, and energy facilities.

DEPARTMENT OF NATURAL RESOURCES AND COMMUNITY DEVELOPMENT
(DIVISION OF ENVIRONMENTAL MANAGEMENT)
THE DEPARTMENT OF NATURAL RESOURCES AND COMMUNITY DEVELOPMENT
(OFFICE OF COASTAL MANAGEMENT)

STATE CONTROLS

-Permits to discharge to surface waters or operate waste water treatment plants or oil discharge permits; NPDES Permits, (G.S. 143-215)

-Permits for septic tanks with a capacity over 3000 gallons/day (G.S. 143-215.3).

-Permits for withdrawal of surface or ground waters in capacity use areas (G.S. 143-215.15).

-Permits for air pollution abatement facilities and sources (G.S. 143-215.108).

-Permits for construction of complex sources; e.g. parking lots, subdivisions, stadiums, etc. (G.S. 143-215.109).

-Permits for construction of a well over 100,00 gallons/day (G.S. 87-88).

-Permits to dredge and/or fill in estuarine waters, tidelands, etc. (G.S. 113-229).

-Permits to undertake development in Areas of Environmental Concern (G.S. 113A-118).

NOTE: Minor development permits are issued by the local government.

DEPARTMENT OF NATURAL RESOURCES AND COMMUNITY DEVELOPMENT (DIVISION OF EARTH RESOURCES)

STATE CONTROLS

-Permits to alter or construct a dam (G.S. 143-215.66).

-Permits to mine (G.S. 74-51).

-Permits to drill an exploratory oil or gas well (G.S. 113-381).

-Permits to conduct geographical exploration (G.S. 113-391).

DEPARTMENT OF NATURAL RESOURCES AND COMMUNITY DEVELOPMENT (SECRETARY OF NRCD)

STATE CONTROLS

-Sedimentation erosion control plans for any land disturbing activity of over one contiguous acre (G.S. 113A-54).

-Permits to construct an oil refinery.

DEPARTMENT OF ADMINISTRATION

STATE CONTROLS

-Easements to fill where lands are proposed to be raised above the normal high water mark of navigable waters by filling (G.S. 146,6(c)).

DEPARTMENT OF HUMAN RESOURCES

STATE CONTROLS

-Approval to operate a solid waste disposal site or facility (G.S. 130-166.16).

-Approval for construction of any public water supply facility that furnishes water to 15 or more year-round residences or 25 or more year-round residents.

DEPARTMENT OF CULTURAL RESOURCES (DIVISION OF ARCHIVES AND HISTORY)

FEDERAL

-National Historic Preservation Act of 1966

-The Archeological and Historic Preservation Act of 1974, Public Law 93-291

-Executive Order 11593, Protection and Enhancement of the Cultural Environment, 16 U.S.C. 470 (Supp. 1, 1971

-National Environmental Policy Act, Public Law 91-190, 42 U.S.C. 4321 F.L. Sep. (1970)

-Community Development Act of 1974, Public Law 93-383: Environmental Review Procedures for the Community Development Block Grant Program (40 CFR Part 58)

-Procedures for the Protection of Historic and Cultural Properties (36 CFR Part 800)

-Comprehensive Planning Assistance Program (701) as Amended by Public Law 93-393

-The Department of Transportation Act of 1966, Public Law 89-670

-Identification and Administration of Cultural Resources: Procedures of Individual Federal Agencies

STATE

-G.S. 121-12 (a) Protection of Properties in the National Register

-State Environmental Policy Act, Article 1 of chapter 113A of the General Statutes

-Executive Order XVI

-Indian Antiquities, G.S. 70.1-4

-Salvage of Abandoned Shipwreck and other Underwater ARcheological Sites: G.S. 121-22, 23; 143B-62(1) g, (3)

-Archeological Salvage in Highway Construction, G.S. 136-42.1

-Provisions for Cultural Resources in Dredging and illing Operations, G.S. 113-229

ARMY CORPS OF ENGINNERS
(DEPARTMENT OF DEFENSE)

FEDERAL CONTROLS

-Permits required under Sections 9 and 10 of the Rivers and Harbors of 1899; permits to construct in navigable waters.

-Permits required under Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972.

-Permits required under Section 404 of the Federal Water Pollution Control Act of 1972; permits to undertake dredging and/or filling activities.

COAST GUARD
(DEPARTMENT OF TRANSPORTATION)
THE GEOLOGICAL SURVEY BUREAU OF LAND MANAGEMENT
(DEPARTMENT OF INTERIOR)

FEDERAL CONTROLS

-Permits for bridges, causeways, pipelines over navigable waters; required under the General Bridge Act of 1946 and the Rivers and Harbors Act of 1899.

-Deep water port permits

-Permits required for off-shore drilling.

-Approvals of OCS pipeline corridor rights-of-way.

NUCLEAR REGULATORY COMMISSION

FEDERAL CONTROLS

-Licenses for siting, construction and operation of nuclear power plants; required under the Atomic Energy Act of 1954 and Title II of the Energy Reorganization Act of 1974

FEDERAL ENERGY REGULATORY COMMISSION

FEDERAL CONTROLS

-Permits for construction, operations and maintenance of interstate pipelines facilities required under the Natural Gas Act of 1974.

-Orders of interconnection of electric transmission facilities under Section 202(b) of the Federal Power Act.

-Permission required for abandonment of natural gas pipeline and associated facilities under Section 7C (b) of the Natural Gas Act of 1938.

-Licenses for non-federal hydroelectric projects and associated transmission lines under Sections 4 and 15 of the Federal Power Act.

PART II

CONSTRAINTS TO DEVELOPMENT

PART II
CONSTRAINTS TO DEVELOPMENT
TABLE OF CONTENTS

A. LAND SUITABILITY

I. INTRODUCTION

An analysis was made to determine the suitability for development of all undeveloped lands in Yaupon Beach. This consisted of three major mapping schemes which are as follows:

(1) Soil limitations and productive lands
(2) Lands with severe restrictions for development
(3) Land suitability

These three schemes were analyzed and mapped, based upon the best information available. The major purpose of this analysis was to identify those areas in Yaupon Beach that have major constraints on development and to better educate the public of these areas.

The first scheme deals with general soil conditions in Yaupon Beach and how the natural soil properties present certain restrictions on development.

The second scheme further breaks down the soil conditions into those areas where septic tanks will not function and development should not occur unless public sewer service is available. This mapping unit combines those soil associations which are sandy, poorly drained, and have relatively high water tables. Included in this analysis are those areas where septic tanks function but where deep sands have fast pecolation rates causing contamination to nearby water wells. Since this pollution problem has a high probability of occurring, development within these areas should not occur unless either public water or sewer systems are available. Essentially these areas will be water quality limited areas if present patterns of growth and development continues.

The other division illustrates lands within the Town where no development should be allowed. These include a) coastal wetlands; b) ocean beaches; c) frontal dunes and d) fresh water marshes. All of these soil types were given very severe soil ratings and are not further distinguished from one another on the suitability map.

The last analysis deals with land suitability showing those areas where future growth should not be programmed to occur because of various natural and man-made conditions.

The first breakdown deals with fragile areas which could be easily destroyed or damaged by inappropriate or poorly planned development. These include:

1) Coastal Wetlands
2) Frontal Dunes
3) Ocean Beaches and Shorelines
4) Complex Natural Areas
5) Wetland Wildlife Habitats
6) Fresh Water Marshes

The second division of this analysis identifies natural hazard areas. These consisted of those areas that have high rates of erosion at the present and in the past and could be considered hazardous to development and certain other land uses. These areas are ocean erodible areas.

The third division of this analysis identifies those areas of archeological value. The location of Yaupon Beach's one archeological site is marked to serve as a reminder of their important cultural value. No legal restrictions actually exist in most of these sites, but it is recommended that they be avoided or carefully preserved in the development processes. Most of such sites are those that are recognized by the State, however, it is felt that there are many more that are merely unknown to the State.

2. SOIL SUITABILITY ANALYSIS

Introduction

This is an analysis of the general suitability of Yaupon Beach's soils for use as future sites for development. All of the Town's soils are classified as having some degree of physical limitations for future development. This analysis uses a general site map of the Town and locates those soil associations with natural properties that are not well suited for development. The analysis discusses each soil and its interpretation. This analysis is essentially a guide and aid in the preparation of a land classification map. The maps and analysis are useful guides in planning and residential growth, engineering works, recreational facilities and community projects. This is not a suitable analysis for planning and management of a specific residence or lot, or for selecting exact locations for building roads, etc., because the soils in any one association ordinarily differ in slope, drainage, depth and other characteristics that could affect their management. The Outer Banks S.C.S. Soil Survey was used to develop the soil analysis section for each association.

Soil Conditions

This section of the report groups together various soils associations having similar soil properties and thus interpretes their natural soil condition as having either resource potential or specific development limitation. The soil ratings are determined on this basis. Such interpretations encompass certain established tests to each soils physical and chemical properties. They are as follows:

1) Soil Horizons - depth in inches of the major soil strata from surface to subsurface soils. This is used to determine relative depth to water table and the soils chemical properties.

2) Texture - based on the relative amounts of sand, silt, and clay in a soil, giving rise to testured classes such as sand, sandy loam, clay loam, and clay.

3) Particle Size - based on the single soil unit and relates to shrink-swell potential, plasticity, and bearing capacity.

4) Permeability - that quality of a soil that permits the movement of water and air. Estimates of the range of permeability is the rate of time it takes for downward movement of water in the major soil layers when saturated, but allowed to drain freely.

5) Soil Structure - the arrangement and compaction of individual soil particles into the basic soil building blocks.

6) Available Water Capacity - the ability of soils to retain water for plant use.

7) Soil Reaction of ph- the degree of acidity or alkalinity of a soil.

Coastal Floodplain is defined as the land areas adjacent to coastal sounds, estuaries; or the ocean which are prone to flooding from storms, with an annual probability of one percent or greater (100-yr. flood). Land uses must comply with standards of the Federal Insurance Administration.

The flood zone designations used on the suitability maps are those accepted by the Federal Insurance Administration.

Flood Zone A - are those areas of 100-year flood.

Flood Zone B - are those areas between the limits of the 100-year flood and 500-year flood areas.

Flood Zone C - are those areas outside the 500-year flood limits.

The CAMA Area of Environmental Concern for Yaupon Beach delineated on the Fragile Areas Map is the Ocean Erodible Area above the mean high water mark where excessive erosion has a high probability of occurring. In delineating the landward extent of this area, a reasonable 30-year recession line was determined based on the average annual erosion rate. Appropriate land users in this AEC are recreation, conservation, and easements for access.

Soil Categories

SOILS IN THE SLIGHT CATEGORY

Wando fine sand
The soils are sandy and excessively drained. Runoff is slow, while infiltration and permeability range from rapid to very rapid. The seasonal high water table depth is usually greater than five feet. Found on the higher ridges and flats on the sound side of the barrier islands, these soil areas are commonly too far from the ocean to receive large amounts of sea spray.

Kureb fine sand
The soils are sandy and excessively drained. Permeability is high, and available water capacity is very low, with a seasonal high water table below five feet. The soils are acid throughout, and are found on the penninsulas between the Intercoastal Waterway and the dunes.

Newhan fine sand
The soils are sandy and range from well-drained to excessively drained, often experiencing drought conditions. Water percolation is very rapid through the stratified sandy deposits that range from fine to coarse snad with varying amounts of shells. Typically found in long ridges on dunes parallel to the ocean, the soil areas are subject to salt spray and blowing sand.

SOILS IN THE MODERATE CATEGORY

Newhan-Corolla complex
The soils consist of two dominant types, Newhan and Corolla, which occur in an interrelated pattern on the landscape. Often this complex type occupies the transitional zone between the higher-lying dunes to the east and the broad flats to the west, consisting of low dunes and intervening basins that separate the dunes.

Newhan soils are well - to excessively drained, dry, and have a low natural fertility. There is a thick surface layer low in organic matter and plant fiber. Sand is coarse and contains varying amounts of shell fragments. Typically the water table is within 15 to 20 inches of the surface.

SOILS IN THE SEVERE CATEOGORY

Corolla fine sand
The soils are moderately well-drained and sandy throughout, with a thick surface layer that is very low in organic matter. The coarseness of the sand and the amount of shell fragments varies throughout. Percolation is rapid. Depth to the high table flucuates with seasonal changes between one and one half to three feet. These soils are located on the flats that lie behind the foredunes.

SOILS IN THE VERY SEVERE CATEGORY

Bohicket Soils, low
The soils are poorly drained, clayey marsh soils. They are continuously wet, soft, and sticky. The soils are flooding daily with sea waters, and have a high water table ranging from zero to three feet. Found where rivers and streams empty directly into the ocean, the areas are limited for uses other than for wildlife, marine habitat, and aesthetic purposes. Generally, the soils are "acid sulfate" and therefore incapable of supporting vegetation.

Leon fine sand
The soils are sandy throughout with rapid percolation. The seasonal high water table is at or near the surface during periods of high rainfall but may drop below 40 inches during the drier seasons. The surface layer contains some organic matter and plant fiber.

Beach-Foredune association
The soil area includes both the beach and the "frontal dune." The beaches are flooded daily by tidal action and contain sand ranging from fine to very coarse with varying amounts of shell fragments.

The foredune portion consists of a dune just landward and parallel to the beach. It is subject to severe erosion by wind and wave action in the absence of vegetation. Permeability is rapid for both areas and the high water table ranges from zero to three feet on the beach and up to six feet at the foredunes.

3. SEPTIC TANK PROBLEM AREAS

Introduction

A major factor influencing the health of individuals where public sewers are not available is the proper disposal of human excreta. Many diseases, such as dysentery, typhoid, infectious hepatitis, para-typhoid, and various types of diarrhea are transmitted from one person to another through the fecal contamination of food and water, largely due to the improper disposal of human wastes. For this reason, every effort should be made to prevent such hazards and to dispose of all human waste so that no opportunity will exist for contamination of water or food.

Safe disposal of all human and domestic wastes is necessary to protect the health of the individual and the community and to prevent the occurance of a bad public nuisance. In an area such as Brunswick County the principal method used to handle such wastes is the septic tank and filter field. To accomplish satisfactory, sanitary results, such wastes must be disposed of so that they meet the following criteria as set by State Health regulations:

1) They will not contaminate any drinking water supply.
2) They will not give rise to a public health hazard by being accessible to insects, rodents, or other possible carriers which may come into contact with food or drinking water.
3) They will not give rise to a public health hazard by being accessible to children.
4) They will not violate laws or regulations governing water pollution or sewage disposal.
5) They will not pollute or contaminate the waters of any bathing beach, shellfish breeding ground, or stream used for public or domestic water supply purposes, or for recreational purposes.
6) They will not give rise to a nuisance due to odor or unsightly appearance.

These criteria can best be met by the discharge of domestic sewage to an adequate public or community sewerage system. Septic tanks and soil absorption trenches are generally considered by health authorities and the construction industry as an interim solution for waste disposal in urban or semi-urban condtions. In other words, they are used when a public sewage disposal system is non-existent or not immediately available. However, when the above criteria are met, and where soil and site conditions are favorable, the septic tank system can be expected to give satisfactory service. Experience has shown that adequate supervision, inspection and maintenance of all features of the system are required to insure compliance in this respect.

When waste input exceeds design capacity output, like in the beach areas during summer visitation, the system becomes worthless. Also chemicals and grease may be placed into the tank which may kill or overload the digestion capabilities of the bacteria.

The use of septic tanks filter fields in defining soil suitability takes into consideration a functional, properly operating system. This is a subsurface system of tile or perforated pipe that distributes effluent from a septic tank into natural soil. The soil material from a depth of 13 inches to 6 feet is evaluated. The soil properties considered are those that effect both absorption of effluent and construction and operation of the system. Properties that effect absorption are permeability, depth to water table and susceptibility to flooding.

a. The Problem Malfunctioning Septic Tanks

The problem of malfunctioning septic tank systems can be more than just a local problem within Yaupon Beach but a statewide and nationwide problem as well. All too often a septic tank system in a coastal county does not function properly and creates an environmental problem in an otherwise healthful neighborhood. A study conducted by the Brunswick County Planning Department has indicated that 17.1% of the Town's total land acreage has been judged to be unsuitable for conventional septic tank systems.* This percentage does not take into effect the spatial arrangement of development on the better soils, but it does indicate a large number of soils which cause septic tank failures. Failure will mean that either improperly treated sewage is being injected into shallow ground waters of the area, or that sewage effluent appears on the ground surface at sometime during the year to be washed into nearby surface waters with each subsequent rain storm.

Problem areas arise within the Town when septic tanks are found in suburban-like subdivisions with small lot sizes, with disturbed or impermeable soils, with seasonally high water tables, and with associated high rates of water usage in the home. In these circumstances the conventional septic tank system is just not well suited for sewage disposal.

*"Soil Survey of the Outer Banks, North Carolina, Part I"

b. Natural Causes of Failures

The most common cause of any septic tank failures in Yaupon Beach is the installation of septic tank systems in soils which have seasonally high water tables. In these areas the lot receives a percolation test by the County Health Department Representative and if the climatic conditions are such that the soils "perc" because of a seasonally low water table, the system is then designed according to the present condition and the waste disposal system is installed.

After some time, seasonal changes cause the water table to rise and the new system stops functioning.

Another cause of failure would be from the presence of an impervious layer which reaches a certain saturation point after a rain and retards the vertical movement of water. These layers may be hardpans (clays), sandpans, and organic stain layers. The unique situation in Yaupon Beach is the fact that these impervious layers are scattered in a haphazard fashion and are somewhat unpredictable in determining their spatial arrangement. Percolation test points are not a good indication of well drained soils to be used for filter fields, because the test point may easily miss one of these layers that could be present in Yaupon Beach.

Particularly the organic stain layer is a difficult soil structure to pin point because of its allusive nature caused by uneven organic decomposition. They present a most difficult problem to soil scientists and Health Department personnel within the County, to adequately predict where they can be found.

c. Circumstantial Mistakes

It is all too easy to attempt to point the blame for the failure of septic tanks at individuals such as the builder, the septic tank installer, the Health Department Official, the home owner, or some other State or Local Official. It is true that all of these people may make mistakes from time to time which can result in a septic tank failure, but they are done in an unconscious manner.

Yaupon Beach could get in such a predicament because it is growing very fast and more demands are placed on the septic tank regulation entities. With this additional pressure for growth, the following errors are commonly made:

1) Lots with high water tables which should have never been approved by the local Department and the soil scientists are approved, because the lot was inspected during the dry seasons.

2) Percolation tests which are not done properly because of limits on time and manpower are the beginnings of septic failures. Examples of this situation are not enough percolation test points, and test holes which were not saturated the day before readings are made. Most of these shortcuts are used only where work loads increase and result in the improper analysis of the proposed building lot.

3) If this percolation rate is in error then the design of the septic system is in error also. Usually this results in a waste water absorption system that is too small for the moist condtions that actually exist. In addition, many of the systems are placed too deep and the drainage lines become flooded from a rising water table.

4) Small lot size is another variable that restrict the effectiveness of a septic tank filter field by demanding smaller absorption field areas so the drainage system can stay within the boundary of the lot.

5) Septic tank system installation is a very important business to insure a functioning system. It is necessary to dig to the correct depth, place in the right drain tile, with the proper grade, on top of the most efficient filter gravel in the absorption trench, to match the individual site needs. All too often one of these important variables is overlooked.

6) Finally, maintenance and proper operation of the finsihed septic tank system by the home owners or occupants is a most important variable to insure a functioning, "healthy" system. Too often the wrong chemicals and objects are flushed into the tanks and too heavy of an overload is placed on the capacity of the filter fields to absorb the waste waters.

d. Controls

Direct Regulation: This method of controlling the problem of septic tanks is presently being utilized by the County Sanitarians. The local health officials guide the installation of a septic tank system according to State Board of Health Regulations which are incorporated into the Brunswick County Ordinance.* There are many variables involved and it is a very complex system to regulate, since it requires quite a few steps performed by various individuals. However if a septic tank system is allowed on a lot the following precise sequence of actions must take place:

1) An evaluation of the soil and percolation tests must be properly conducted to provide a basis for the size and design of the system.

2) A workable layout must be drawn up by an experienced and competent designer.

3) Once the design is drawn, there can be no later changes in house layout, or additions to the system, otherwise the drain field will be too small for the input.

4) There must be no removal or disturbance of the soil during construction because such disturbances cause compaction which reduces the permeability of the soil.

5) Installation crews must be able to install the appropriate system without disturbing the soils and being able to keep the drain lines level, while carefully following the contour of the lot, and adding sufficient gravel in the trenches.

6) There must be no disturbance of the soil after installation caused by deep gardening, digging holes, adding pavement, etc.

*Brunswick County Board of Health Regulations

7) The homeowner must understand the functioning of the whole system and maintain it in the proper working order.

Unfortunately not all of the above actions are followed all of the time and septic systems will fail. It places the local health officials in an awkward position, because they are not able to supervise thoroughly all of the steps. This problem arises in Yaupon Beach because of large housing demands creating large work loads on limited funding and manpower in the local health department.

Subdivision Regulations: Yaupon Beach does have a local subdivision ordinance which helps to alleviate septic tank problems. This Ordinance generally involves the review of the plans for a large residential development or smaller subdivisions by local planning, soils and health officials. Among other things, the soils capability to contain and handle the wastes of a septic tank disposal system is evaluated. Thus the Subdivision Ordinance allows for better review of new projects and notifies the various departments of impending residential developments. In this way they can more effectively enforce their own regulations.

Public Sewer Extensions: A third method of controlling septic tank problems in Yaupon Beach is through the extention of public sewage disposal systems. As new development occurs there will be a point reached in density which can not be safely served by purely septic tank systems alone. When this optimum point is reached the only feasible alternative is building a public sewer system which eliminates the septic tank problem altogether. Yaupon Beach is currently included in the Southeast Brunswick County 201 Facilities Plan, however, because of funding problems at Federal and State levels, it is uncertain whether or not they will remain in the program.

Conclusion: Yaupon Beach does not presently have a septic tank problem, but due to their present rate of residential growth, and their proximity to many environmentally fragile areas, they could very likely develop severe public health problems in regard to septic tank systems. Even though their systems are presently functioning properly, there may be detrimental affects on the quality of ground and surface waters by too rapid filtering action in the coastal sands.

4. FRAGILE AREAS

Located along the North Carolina coast, Yaupon Beach recognizes areas which are environmentally fragile and for which development is discouraged or subject to specifications. In compliance with the Coastal Area Management Act (1974), Areas of Environmental Concern (AEC's) have been designated for the Town. On the map of Fragile areas, this list is associated with the designations of Ocean Beaches and Shoreline and Wetlands Wildlife Habitat.

(1) Coastal Wetlands - Low Tidal Marshland Description. Defined as Marshland consisting primarily of Spartina alterniflora and usually subject to inundation by the normal rise and fall of lunar tides.

(2) Coastal Wetlands - Other Coastal Marshland Description. All other marshland which is not low tidal marshland. Appropriate land uses are those which will not alter natural functions. Examples of acceptable land use may include utility easements, fishing piers, and docks.

(3) Estuarine Waters Description. Estuarine Waters are defined in G.S. 113229 (n) as, "all the water of the Atlantic Ocean within the boundary of North Carolina and all the waters of the bays, sounds, rivers, and tributaries thereto seaward".

(4) Renewable Resource Areas-Watersheds or Aquifers-Special Aquifer Areas-Outer Banks and Barrier Islands Description. Areas of well-drained sands that extend downward from the surface to include an extensive area of fresh water that is an important source for a public water supply identified by the North Carolina Department of Human Resources, Division of Helath Services, or that are classified for water supply use pursuant of Health Services or that are classified for water supply use pursuant to G.S. 143-214.1. Appropriate land uses are those which do not rely upon subsurface waste disposal system or result in salt water intrusion.

(5) Areas Subject to Public Rights-General Description. Areas such as waterways and lands under or flowed by tidal waters or navigable waters, to which the public may have rights of access or public trust rights of access or public trust rights; and areas which the State of North Carolina may be authorized to preserve, conserve, or protect under Article XIV, Section 5, of the North Carolina Constitution.

(6) Areas Subject to Public Rights-Certain Public Trust Areas Description.
All waters of the Atlantic Ocean and the lands there-under from the mean high water mark to the seaward limit of State jurisdiction; all natural bodies of water subject to measurable lunar tides and lands there-under to the mean high water mark; all navigable natural bodies of water and lands there-under to the mean high water mark or ordinary high water mark as the case may be, except privately owned lakes to which the public has no right of access. Appropriate land uses are those which do not interfere with public right of navigation. Navigational channels, drainage ditches, bulkheads and piers are appropriate land uses.

(7) Natural Hazard Areas-Sand Dunes along the Outer Banks Description.
Dunes are defined as ridges or mounds of loose wind-blown material, usually sand. Appropriate land uses are those employing engineering practices and site preparation to minimize unnecessary damage.

(8) Natural Hazard Areas-Ocean Beaches and Shoreline (on the Outer Banks) Description.
These are defined as land areas without vegatation covering, consisting of unconsolidated soil material that extends landward from the mean low tide to a point where any one or combination of the following occur: a) vegetation, b) a distinct change in predominant soil particle size, or c) a change in slope or elevation which alters the physiographic land form. Appropriate land uses are those which preserve to the greatest extent feasible, the opportunity to enjoy the physical, aesthetic, cultural, and recreational qualities of the shorelines.

(9) Natural Hazard Area-Coastal Floodplains Description.
Coastal floodplain is defined as the land areas adjacent to coastal sounds, estu aries, or the ocean which are prone to flooding from storms with an annual probability of one percent or greater (100-year storm). Land uses must comply with standards of the Federal Insurance Administration.

(10) Natural Hazard Areas-Excessive Erosion Areas Description.
a) General Description - areas where geologic and soil conditions are such that there is substantial posibility of excessive erosion or seismic acitvity.

(11) Natural Hazard Areas - Excessive Erosion Areas-Ocean Erodible Areas Description.
Defined as the area above mean high water where excessive erosion has a high probability of occurring. In delineating the landward extent of this area, a reasonable 30 year recession line shall be determined using the best scientific data available. The Ocean Hazard Area setback is 140 feet in Yaupon Beach. Appropriate land uses are recreation, conservation, and easements for access.

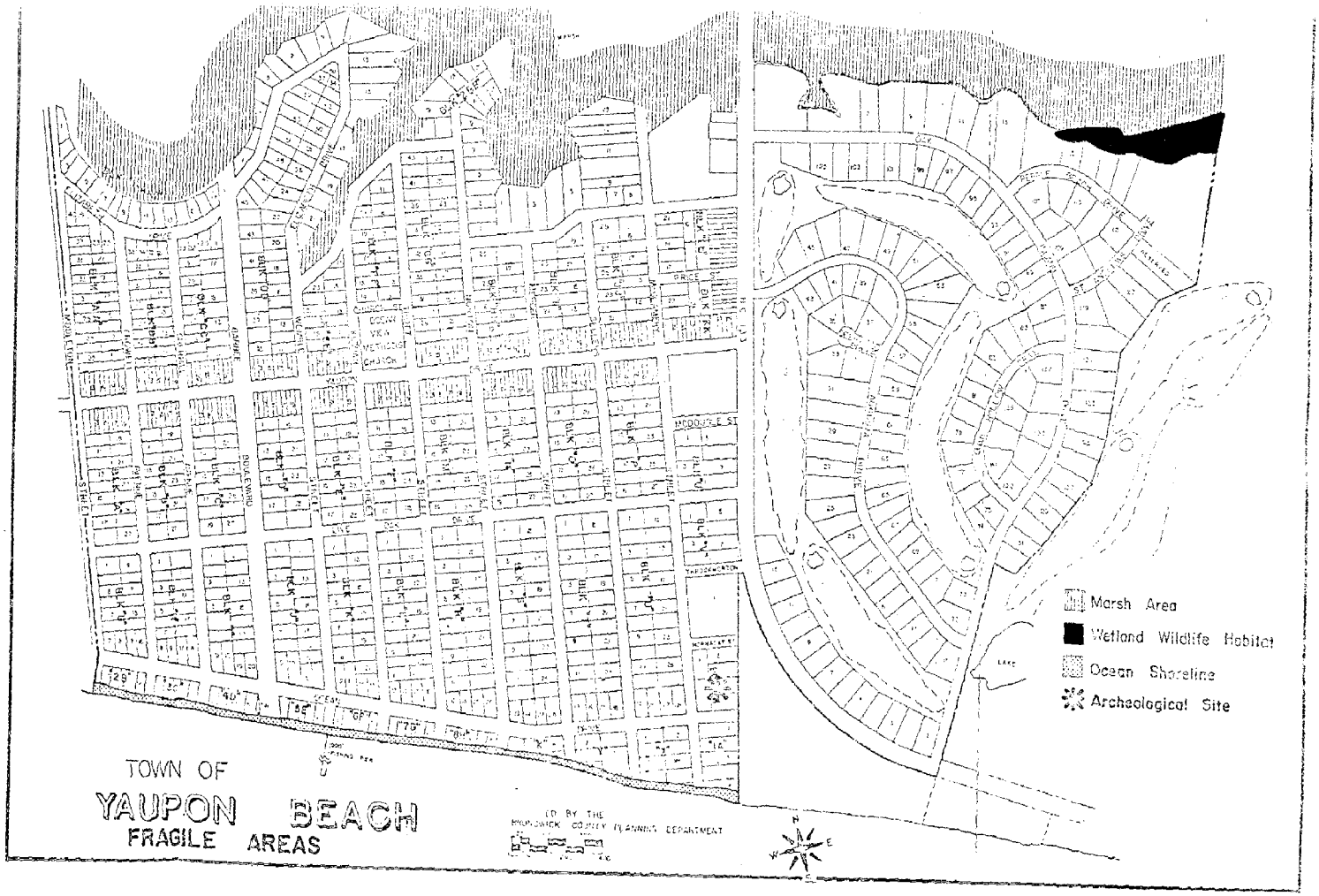
(12) Natural Hazard Areas - Excessive Erosion Areas - Estruarine and River Erodible Areas Description.
Defined as the area above ordinary high water where excessive erosion has a high probability of occurring. In delineating the landward extent of this area, a reasonable 25-year recession line shall be determined using the best available information. Permanent or substantial residential, commercial, institutional or industrial structures are not appropriate land uses.

(13) Natural and Cultural Resource Areas. The final group of AEC's is gathered under the heading of fragile coastal natural and cultural resource areas and is defined as areas containing environmental, natural, or cultural resources of more than local significance in which uncontrolled or incompatible development could result in major or irreversible damage to natural systems or cultural resources, scientific, educational, or associative values, or aesthetic qualities. Included under this category for Brunswick County are archaeological and historic sites.

The following development standards applicable to all AEC's have been established:

(1) No development should be allowed in any AEC which would result in a contravention or violation of any rules, regulation, or laws of the State of North Carolina or of local government in which the development takes place.

(2) No development should be allowed in any AEC which would have a substantial likelihood of causing pollution of the waters of the State to the extent that such waters would be closed to the taking of shellfish under standards set by the Commission for Health Services pursuant to G.S. 130-169.01.


Marsh Area
Wetland Wildlife Habitat
Ocean Shoreline
Archaeological Site
TOWN OF
YAUPON BEACH
FRAGILE AREAS
BY THE
BRUNSWICK COUNTY PLANNING DEPARTMENT

1. EXISTING AND PROPOSED FACILITIES

The future population growth of Yaupon is dependant upon the facilities provided by both the Town and Brunswick County. The proposed public sewerage system will increase the number of developable lots, therefore increasing the density of residential sections. This in turn will create a greater demand on corresponding facilities such as recreation, water, schools, and fire and rescue.

For this reason, a discussion of public facilities is an important element of the Town's Land Use Plan.

A. Water Facilities

Yaupon Beach presently owns and operates a public water system which utilizes wells for its water supply. A 75,000 gallon capacity elevated storage tank is used for fire flow conditions and system pressure maintenance.

At the present time, 437 customers are served by the system. Except for approxiamately 2 or 3 blocks, the entire Town is provided with Public Water. An average of 45,868 gallons are used per day, with the average per customer being 124 gallons per day.

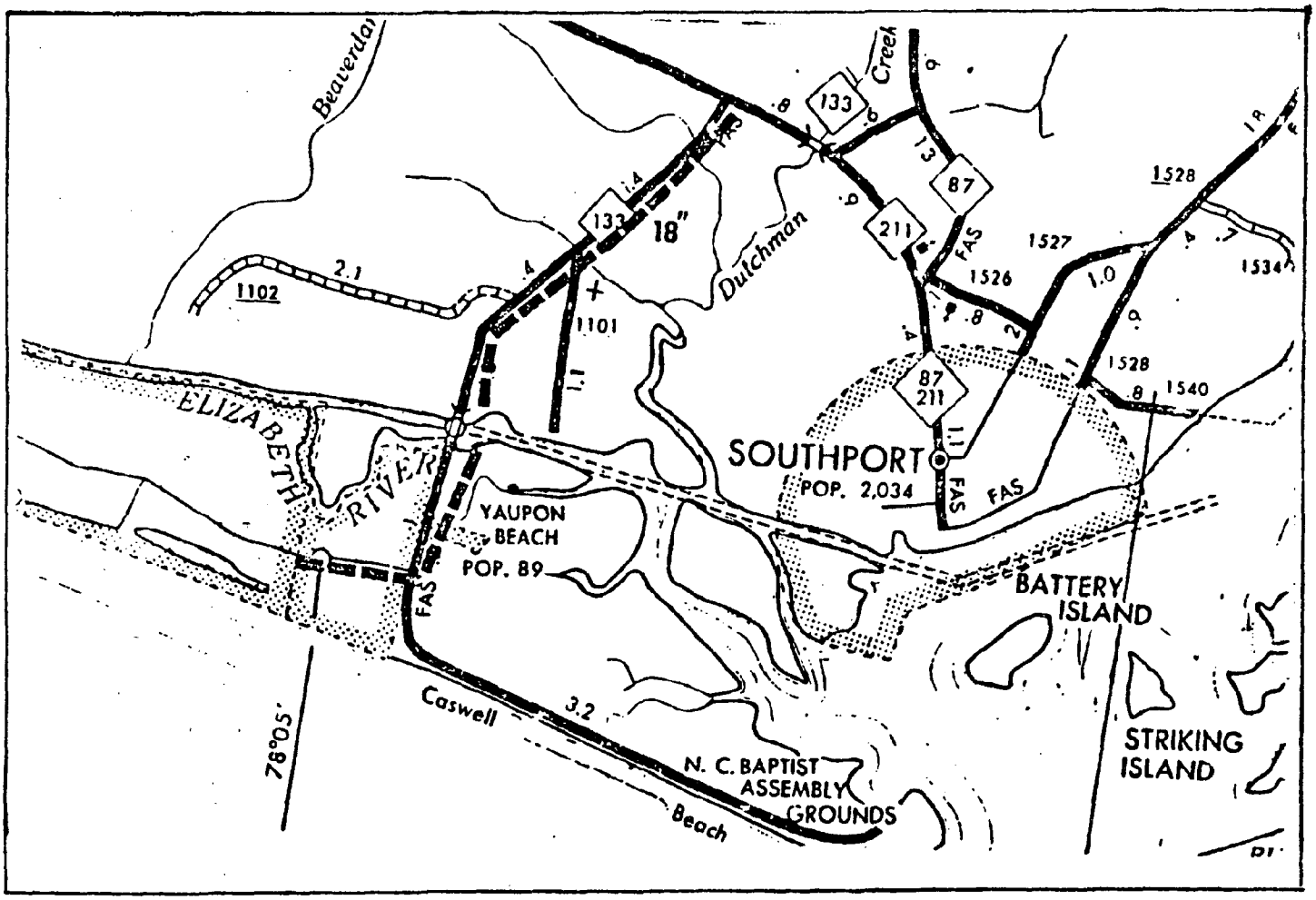
The State of North Carolina requires that "the combined yield of all wells of a water system shall be sufficient to provide the average daily demand (based on 400 gallons per day per customer) in not more than 12 hours pumping time. Based on these standards, at the present rate of pumping (125 GPM) the system is limited to 450 customers. If pumps are adjusted to a rate of 175 GPM, the system would be limited to 630 customers. The Brunswick County Planning Department estimates an additional 98 customers within the next ten years raising the total number to 502. In order to provide for these additional customers (using the average 400 gallons per day as required by the State) the pumping rate will have to be increased.

In addition, the State requires the minimum elevated storage facility to have the capacity of a one-day supply (based on 400 gallons per day per customer). At the present time, the Town's 75,000 gallon capacity tank provides enough storage for only 187 customers well under the 437 currently served. A total of 160,000 gallons storage are needed to meet State guidelines. To avoid future storage deficiences, it would be advisable to increase the storage to provide for the future maximum demand, rather than incrementally. If all lots were built on, Yaupon Beach has a maximum potential of 1200 customers which would require an additional 400,000 gallons of storage.

There are two alternatives for providing this additional storage. Yaupon Beach could either construct a 400,000 gallon ground storage tank with supporting facilities at an approximate cost of $156,500 or connect to the Brunswick County regional water system at a more reasonable estimated cost of $13,250. Connection to the County system would be achieved by a meter and altitude value. No electrical controls or power would be required because the water would flow by gravity into the Yaupon Beach system should the Town's system need to be supplemented.

Given the wide difference of cost, the Town chose to hook up to the County's Phase I Water system. But because the County's present water rate is somewhat higher than the Town's present production cost, the existing wells will be used as the prime source, with the County system as back-up.

The following map shows the Phase I Segment # water line that will serve Yaupon Beach. It will follow N.C. 133 from N.C. 211 to the Town of Long Beach limits. A 12" diameter line already exists along the segment. An 18" diameter line will be added to accomodate a Phase II expansion of service.



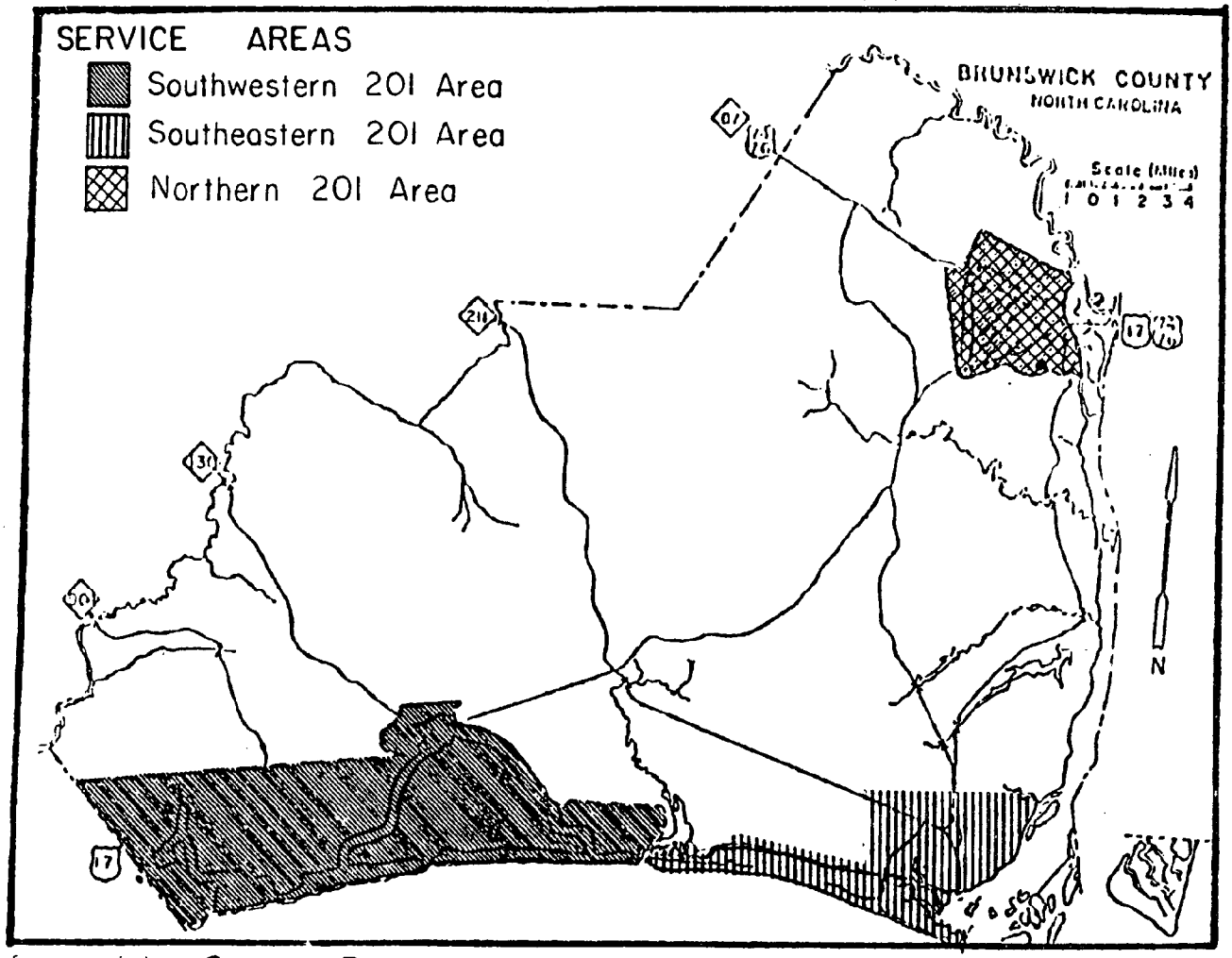
B. Sewerage Facilities

For Yaupon Beach, the principal method for disposal of human and domestic wastes is the standard septic tank and filter field system. In areas where low densities and suitable soils are present, such septic tank and filter field systems offer adequate sewage disposal without serious repercussions. However, in small towns and residential subdivisions with small lot sizes and high occupancy rates, the effectiveness and safety of septic tank disposal systems is significantly reduced by a smaller filter field dictated by the size of the lot.

In order to accommodate future development, minimize the possibility of septic tank failure and thus public health problems and adverse financial impacts, and to minimize the shellfish areas pollution problems, Yaupon Beach has been included in the South-eastern Brunswick County 201 Facilities Plan. The proposed Phase I (1990) and Phase II (2000) facilities will service 100% of the Town of Yaupon Beach. The Phase I facility can serve a summer population of 2,867 and a winter poplulation of 947. The total flow capacity is 268,065. Projected population figures for 1990 are 947 permanent residents and 1,513 seasonal residents making the service capacities for the system adequate for Yaupon Beach.

Funding for the 201 Facilities Plan has not yet been approved, however, due to federal level budget problems. The delay in funding will delay construction of the system. It is probable that this county-wide sewer system will not be a reality until late in the 1980's.

Therefore, it is essential that the Town of Yaupon Beach plan for lower density development in the next five years. At present, the pattern of development is medium density throughout Yaupon Beach and this is dependent on individual septic tank disposal systems. Without a public sewer system, the area is not suitable for higher density development, due to physical constraints of the land to accommodate increasing amount of human and domestic wastes. With additional installations of septic tank disposal systems, the risk of serious environmental repercussions will increase for the Town of Yaupon Beach.



Brunswick County Planning Department, 1980 cpb

C. Recreational Facilities

At the present time, Yaupon Beach provides no recreation or park facilities for the public other than the beach itself. Because of this, many residents rely on Long Beach for sports facilities and a number of recreational programs for the youth and elderly.

In addition, there are a number of private facilities in Yaupon Beach available for use by residents. Local motels have one tennis court and 3 pools. The Oak Island Country Club has golf, tennis, and swimming facilities. There is also a dance studio, 3 arcades, and fishing pier with restuarant.

Most other recreation needs involve the 0.7 miles of beach in Yaupon Beach. Public access to the oceanfront is provided by the extension of eleven street ends; included are six hard surface street ends for access and parking. More parking could be added by widening the street ends to the width of the right-of-way. Also, some measures should be taken to help control erosion such as limiting parking a greater distance back from the dunes and the construction of walkover in areas of high pedestrian traffic.

The importance of the beach to the Town cannot be underestimated as it is responsible for a large portion of the tourist industry which substantially contributes to the economy of Yaupon Beach. Yet, at the same time, other public recreation activities should be considered by the Town, especially with the growing number of retired residents.

2. POPULATION PROJECTIONS

Introduction

Population projections provide the basis for most major planning decisions. It is on these projections that planning future needs for services and facilities are based. Not only are the total number of people important but also whether they are permanent or seasonal residents.

To be sure, projecting population is a guessing game because the influences that create the ebb and flow of people is unpredictable, therefore, projections are made on the assumption that the general conditions at the time of the projection will remain stable. Projections must be reviewed often and updated based on conditions at the time of the review.

The population of Yaupon Beach has already exceeded projections made in the early 1970's for the year 1990 because the degree of current seasonal development was unknown at that time.

Contained within this section are the projections of Yaupon Beach's population through the year 2000.

YAUPON BEACH POPULATION PROJECTIONS

Year	Brunswick County	Yaupon Beach Permanant	Percent of County	Yaupon Beach Seasonal	Subtotal
1985	51,200	750	1.62	1,227	1,977
1990	64,300	947	1.47	1,513	2,460
2000	78,000	1,176	1.51	1,664	2,840

Sources: N.C. Dept. of Administration
Cape Fear C.O.G.
Southeastern Brunswick County 201 Facilities Plan
Brunswick County Planning Department

YAUPON BEACH PROJECTED POPULATION CHANGES

Year	Yaupon Beach Population permanent	seasonal	Percent Change permanent (from 1980)	seasonal (from 1980)
1985	750	1,227	39.41%	19.24%
1990	947	1,513	13.82%	9.56%
2000	1,176	1,664	24.18%	9.98%

As in the past, Yaupon Beach will continue to rank about fifth as a County population center. Seasonal residents will continue to be a smaller percentage of the total population as more residents retire in the area permanently.

The 1980-1985 population change of Yaupon Beach is, like the 1985 population, some what lower than might be expected. These low percentages are due to the nature of the population projection methodology, as outlined on the following page. The methodology is based historically on average increases and percentages of County population, and therefore is thought to be the best method to utilize for the Yaupon Beach Projections regardless of their slightly low characteristics.

From 1985-1990, the population percentage increase in Yaupon Beach is projected to be 13.82% for permanent and 9.56% for seasonal populations. This increase is expected to continue for the 1990-2000 era with 24.18% for permanent and 9.98% for seasonal.

Population Projection Methodology

Projections for both permanent and seasonal populations are based upon a ratio-step down method from historical and existing population trends in Brunswick County. Through simple analysis it was learned that the ratio of the Brunswick County population to the Yaupon Beach permanent and seasonal population, respectively, has remained fairly constant from 1970 to 2000. Using this fact and the following assumption, the above projections were made.

Assumption: The permanent, seasonal, and subtotal populations of Yaupon Beach in relation to Brunswick County's total permanent population will remain the same through time.

Projection Calculations

Calculation of Permanent Population

Year	Brunswick County	Yaupon Beach Permanent		Ratio Factor
1980	38,100	538		.0141207
1990	64,300	947		.0147278
2000	78,000	1,176		.0150769
			Total	.0439254

Yaupon Beach Population

Ratio Factor = Brunswick County Population

Ratio Multiplier = $\frac{.0439254}{3}$ = .0146418

Year	Brunswick County		Ratio Multiplier	Yaupon Beach Permanent Population
1970	24,223	X	.0146418	355
1975	35,621	X	.0146418	522
1985	51,200	X	.0146418	750

Calculation of Seasonal Population

Year	Brunswick County	Yaupon Beach Seasonal		Ratio Factor
1980	38,100	1,029		.0270078
1990	64,300	1,513		.0235303
2000	78,000	1,664		.0213333
			Total	.0718714

$$\text{Ratio Factor} = \frac{\text{Yaupon Beach Population}}{\text{Brunswick County Population}}$$

$$\text{Ratio Multiplier} = \frac{.0718714}{3} = .0239571$$

Year	Brunswick County Population		Ratio Multiplier	Yaupon Beach Seasonal
1970	24,223	X	.0239571	580
1975	35,621	X	.0239571	853
1985	51,200	X	.0239571	1,227

Calculation of Subtotal Population

The Subtotal Population is the addition of the Seasonal to the Permanent Populations. The Subtotal Population is the peak number of persons projected to be in Yaupon Beach.

3. ESTIMATED DEMAND

The estimated demand for Yaupon Beach is expressed in terms of the holding capacity of the Town; this is the maximum population that can be safely and economically supported by the present and planned facilities, regulations,and developable land of the Town.

The holding capacity of a planning district refers to the ability of the natural and man-made systems of an area to support the demands of various land uses. It refers to inherent limits in the systems beyond which change cannot be absorbed without resulting in instability, degradation, or irreversible damage.

Residentially speaking, the holding capacity of a planning district is the number of dwelling units the vacant and renewal land in the planning district will accommodate to a prescribed pattern of residential densities.

The basic elements used in determining holding capacity are projected population increases during the planning period, exisiting and proposed urban water and sewerage facilities, future planned development, institutional and organizational constraints, transportation systems, vunerable habitats, lands with soils suitable for development, energy supplies, man-made hazard areas, and archeological and historical sites.

Measurement techniques for holding capacity are necessarily dynamic rather than static. Measurement is based upon current existing and proposed holding capacity elements. In the future these elements may change and thus alter the holding capacity of the planning area. Changes in the elements may be brought about by technogical advances, economic fluctuations, energy crises, new life style attitudes, and institutional changes. However, major changes are not brought about in very short time spans. The holding capacity analysis is under review every five years and should therefore keep up with all element changes that have occurred. Because of this, and because in holding capacity analysis is based upon all current element trends, the resultant estimated demand is thought to be rather accurate.

a. Water Facilities Capacity

The present Yaupon Beach water system is sufficient to provide service to 450 customers using the State standard of 400 gpd/ capita since the system is presently servicing 437 customers, capacity is being approached. A recent engineering report shows that if the pumps were adjusted to a more rapid rate, the system could service 630 customers. The Brunswick County Planning Department estimates the total number of customers in 1990 to be 502. Since the Town of Yaupon Beach does plan on extending services to all future residents, it can be assumed that the capacity number to be used for this estimate is 630 customers; a number that, given the present growth rate and residential densities, won't be reached until 2003. The Town is in the planning process of connecting to the County's system. Potential customer volume will be much greater and the resultant capacity year extended.

b . Sewerage Facilities Capacity

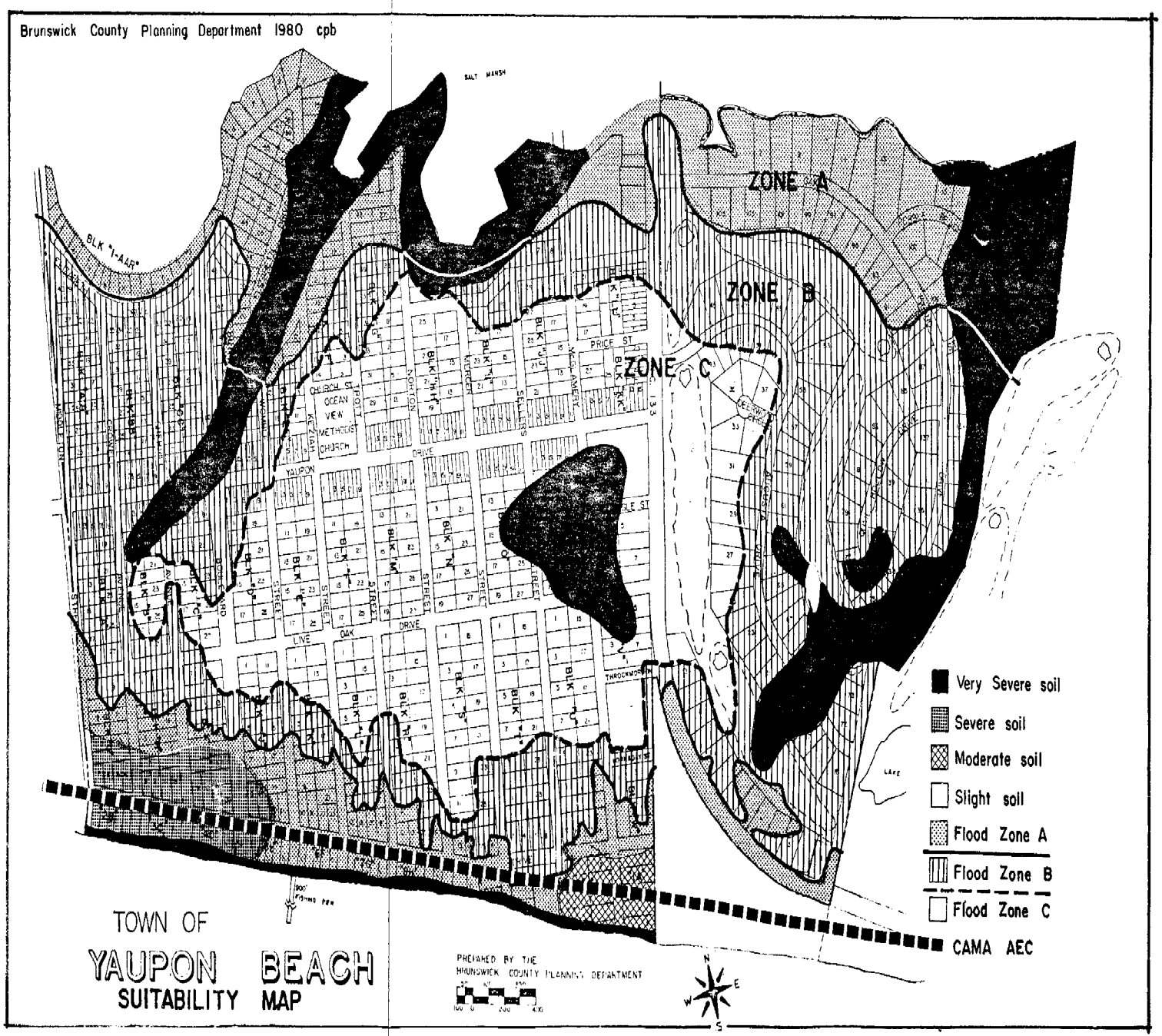
The present method of sewage disposal in Yaupon Beach is the conventional septic tank. If Yaupon Beach were to continue to utilize this method of sewage disposal, their capacity would soon be reached in terms of resultant health hazards and danger to adjacent estuarine waters. However, in order to accommodate future development, Yaupon Beach plans to participate in the Southeast 201 Facilities Plan. Under this system Yaupon Beach could serve a total summer and winter population of 3,814, a population that reaches well into the first decade of the twenty-first century.

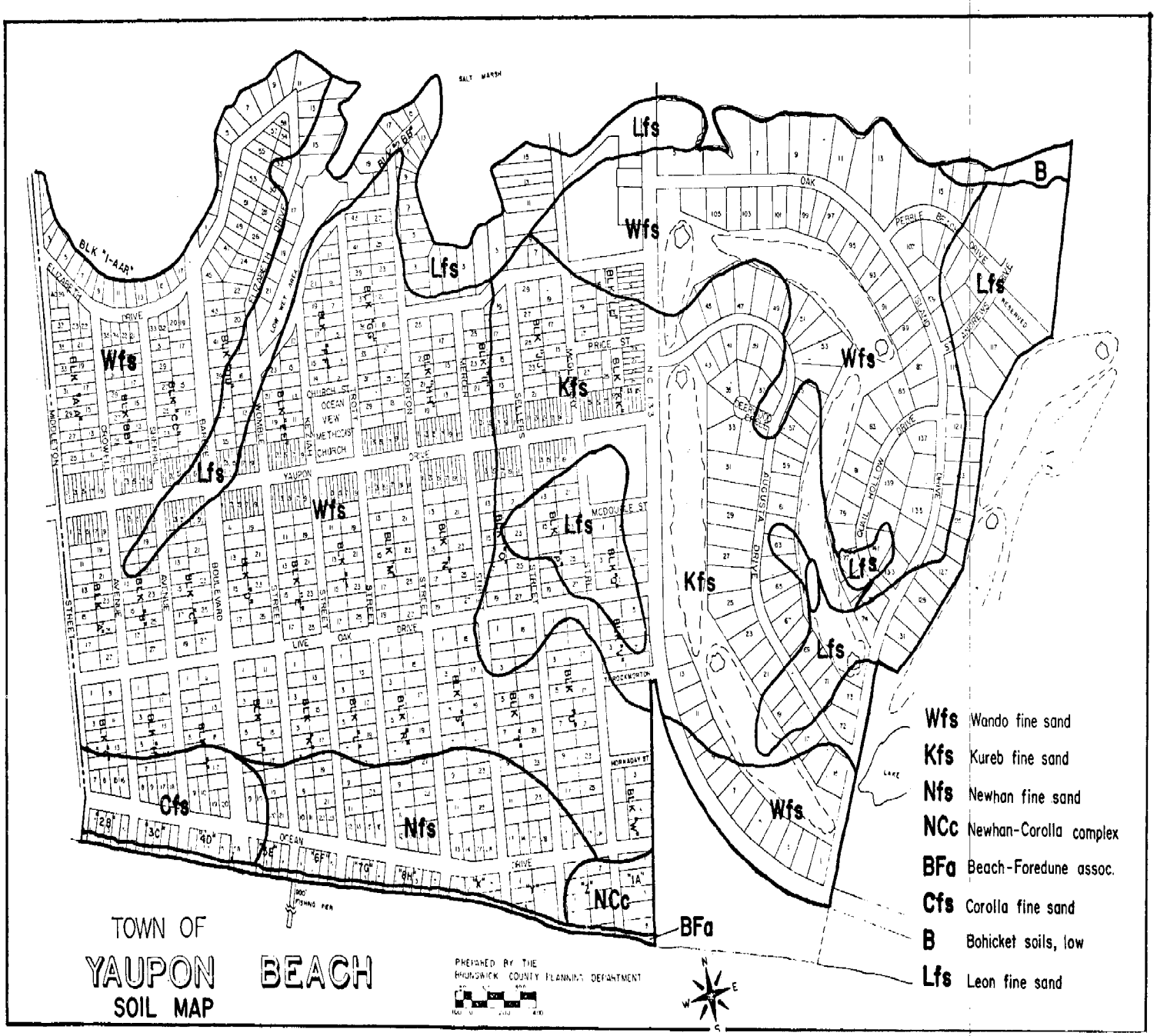
c . Developable Lands

When assessing developable lands for Yaupon Beach, all lands not suitable for development must be subtracted from all undeveloped lands. Lands not suitable are primarily those with very severe soils. Yaupon Beach has a total of 181.4 undeveloped acreage. Very severe soils in Yaupon Beach account for 66.93 acres of which very little is developed. This leaves approximately 100 acres suitable for development. Using the average acreage per unit of .37 acre, this land is suitable to accommodate approximately 270 units, of which about 89 percent, or 240 would be residential. Given a permanent and seasonal average household size of 3.58, this would be enough residential units to accommodate 859 additional persons, or a ultimate of 2,426 persons. This population figure is presently estimated to be reached before the year 2000, around 1990. Therefore, regardless of the capacity of water and sewer facilities, the capacity of the developable land in Yaupon Beach will apparently be reached first. This estimate could of course change given fluctuations in given existing residential densities and more land becoming developable with the provision of public sewer service.

PART III

POLICY DEVELOPMENT AND IMPLEMENTATION


Brunswick County Planning Department 1980 cpb
ZONE A
ZONE B
ZONE C
Very Severe soil
Severe soil
Moderate soil
Slight soil
Flood Zone A
Flood Zone B
Flood Zone C
CAMA AEC
TOWN OF
YAUPON BEACH
SUITABILITY MAP
PREPARED BY THE
BRUNSWICK COUNTY PLANNING DEPARTMENT


Lfs
B
Wfs
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Wfs
Kfs
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Wfs
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Kfs
Lfs
Lfs
Wfs
Cfs
Nfs
NCc
BFa
TOWN OF
YAUPON BEACH
SOIL MAP
PREPARED BY THE
BRUNSWICK COUNTY PLANNING DEPARTMENT
Wfs Wando fine sand
Kfs Kureb fine sand
Nfs Newhan fine sand
NCc Newhan-Corolla complex
BFa Beach-Foredune assoc.
Cfs Corolla fine sand
B Bohicket soils, low
Lfs Leon fine sand

PART III
POLICY DEVELOPMENT AND IMPLEMENATION
TABLE OF CONTENTS

A. PUBLIC PARTICIPATION

Several techniques were used to involve these residents in the land use planning process for Yaupon Beach. Local meetings with county planners, Town Officials, and community residents were held. These meetings fostered public participation in the identification of community problems and issues and in the review of preliminary land use plans and the Town Policy Statements. Important issues were also reported upon in the local weekly newspapers. This served to inform residents and create awareness about concerns affecting their community. Also, as a convenience to the town residents with questions, concerns, and ideas about land use planning for Yaupon Beach, a "dial-a-planner" service was in operation and publicized from February 1, 1980 to June 15, 1980. The service allowed those people unable to attend local meetings to talk directly with a county planner. Finally, as an effort to involve residents in the planning process, the Brunswick County Planning Department sent out a questionnaire to all property owners in the community. The survey sought opinions and attitudes that Yaupon Beach residents hold on issues regarding land use and development, service provision, capital improvements, and beach strand policy.

The questionnaire, by far, elicited the most participation by Yaupon Beach residents in the land use planning process. Approximately 404 questionnaires were sent out the middle of February, 1980. One hundred twenty-one were then tabulated during the middle of March, 1980. The following represents an analysis of the opinions and concerns of the 30 percent who took the time to respond.

Resident Type

Fifty four percent of the respondents were permanent residents, 44 percent were seasonal, and 2 percent, did not classify themselves.

Persons per household ranged from 1 to 5, with the majority of responses indicating 2 persons per house, which reflects a large number of retired property owners.

The property owners who answered the questionnaire were for the most part between the ages of 41 and 65 years. They indicated the following age and sex distribution in their residences.

Population (Age in Years)	Male	Female
0-25	11	5
26-45	13	9
46-65	27	26
66+	19	12

Work Place

Responses indicated that approximately 18 percent of the property owners work in the immediate area of Yaupon Beach, while 27 percent work outside the immediate area. Thirty seven percent of the respondents indicated they were retired, and about 17 percent did not answer the question.

Major Problems Facing Yaupon Beach

Property owners were asked to list problems they felt were facing Yaupon Beach. Erosion was the most prevalent answer. Other frequent answers included public services, litter, and sewage facilities.

Characteristics of Yaupon Beach - Desirable and Undesirable

When asked what characteristics made Yaupon Beach a desirable place to live, residents listed most often the characteristics to family orientation and friendly people. The beach location also made it a desirable place to live.

As for undesirable conditions in Yaupon Beach, residents noted a wide range of items; however, litter and odor from the local fish factory were the most frequent answers. The streets and inadequate public services were also mentioned frequently as undesirable conditions.

Public Facilities and Services

Property owners were also asked to respond to questions evaluating facilities and services in the community and financing mechanisms for future facilities and services. Specifically, they were asked to rate ten service/facility related itmes on a scale of one to five. One was the lowest or worst rating, while five was the highest or best. In general, water service, refuse service, fire and police protection were rated fairly high.

Property owners were also asked if they would support construction of a bridge from a location at the western part of Oak Island to the mainland. The majority of respondents did support the bridge. Approximately 69 percent of the responses did favor it, 21 percent did not favor it, and 10 percent did not answer the question.

Future Development

When asked about the future development of Yaupon Beach, property owners generally agreed on the types of development to be encouraged and discouraged. Permanent and Seasonal, single family dwellings topped the list of types to be encouraged and multi-family, condominiums, mobile homes, and industrial were types to be discouraged. The response was split on whether to discourage or encourage duplex, commercial, and tourist-related business development. The following is a list of the different development types with the percentage of responses for encouragement or discouragement. Any percentage not accounted for in the table are due to "no response".

Type	Encourage	Discourage
Permanent Residential	67%	2%
Seasonal Residential	53	4
Single Family Dwellings	63	3
Duplexes	21	30
Multi-Family	7	48
Condominiums	15	50
Mobile Homes	3	59
Commercial	20	42
Industrial	3	54
Tourist-related business	41	24

Polluted Shellfish Areas

In reference to shellfish areas adjacent to Yaupon Beach which were closed to harvesting because of pollution, the residents were asked what methods, if any, they would support to clean up these areas and permit harvesting. A total of 167 responses were given. Of these responses, construction of sewage treatment facilities received 43 percent, prevention of building near wetlands (within 75 feet) received 34 percent, and increase lot size requirements for building homes received 16 percent. The remaining percentage of responses were other various suggestions for dealing with the problem.

Beach Erosion

The rate of beach erosion on Yaupon Beach has been established by the State of North Carolina to be 4.7 feet per year. The State requires that buildings on the beach front should last thirty years, and that to accomplish this, a setback from the water of 140 feet must be required. Yaupon residents were asked what they thought of this policy. The majority of those who answered the question felt that the policy should remain in effect and should be enforced (75 percent of all responses to the question). Eighteen percent felt that people should be able to build closer to the water, but not be allowed to get federal flood insurance if they do build closer, while 7 percent felt the policy should be canceled altogether.

Property owners were also asked what they would favor the Town of Yaupon Beach do in regard to beach renourishment projects. Less than half of the total respondents chose to answer this question. Of those who did respond, 45 percent supported financing a portion of the project cost, 30 percent supported providing areas from which to take sand and locations on which waste soils can be deposited, and 26 percent supported providing easements for work.

Vehicles on the Beach

The questionnaire asked residents whether or not vehicles should be permitted on the dunes and beaches. About 60 percent of the residents said they should not, 3 percent said they should, and 27 percent chose not to respond.

Beach Access

Eighty responses were received for a question regarding what measures residents would support to improve beach access. Of those who responded, 55 percent indicated they would support improving the parking facilities of existing access areas, while 45 percent would favor the construction of dune walkover structures.

Recreation Facilities

Residents were asked what type of recreational facilities they felt were needed at Yaupon Beach. A total of 145 responses were given which were fairly well distributed among the four different choices. A multi-purposes center received 33 percent of the total responses, a youth oriented program received 24 percent, an increase in park areas received 23 percent, and an elderly oriented program received 20 percent.

Emergency Preparedness

When asked if Yaupon Beach was well enough prepared for hurricane and flood evacuation, 42 percent of the residents said "yes" while 17 percent said "no". Forty one percent of the residents chose not to answer.

Oak Island Merger

One final question was posed to the property owners of Yaupon Beach. Asked if they would support the merging of the towns of Caswell Beach, Yaupon Beach, and Long Beach, the property owners voted equally. Forty five percent said "yes" and 45 percent said "no". Ten percent chose not to respond.

B. POLICY STATEMENTS

The Yaupon Beach Town Council has adopted the following policies for dealing with land use planning issues which will affect the community within the next ten years. These policies establish a systematic basis by which proposed developments will be judged. If a proposed project or development would violate the intent of these policies, action to prevent its construction will be taken by local, state and federal government agencies.

These policies will be used by local officials in their decision making process to increase the consistency and quality of their decisions.

OUTLINE

1. RESOURCE PROTECTION

   A) Estuarine Systems
   B) Ocean Hazard Areas
   C) Natural and Cultural Resource Areas

2. PHYSICAL CONSTRAINTS TO DEVELOPMENT

   A) Septic Tank Suitability
   B) Drainage
   C) Bearing Capacity

3. RESOURCE PROTECTION AND MANAGEMENT

   A) Productive Agricultural and Forest Lands
   B) Net Fishing
   C) Coastal and Estuarine Waters
   D) Existing and Potential Mineral Production Areas
   E) Off Road Vehicles
   F) Manufacturing
   G) Commercial Land Use

4. PROVISIONS OF SERVICES TO DEVELOPMENT

   A) Public Water Supply
   B) Public Sewerage System
   C) Solid Waste Disposal
   D) Rescue Squad and Fire Protection
   E) Public School System
   F) Transportation
   G) Tourism

5. GROWTH PATTERNS

A) Compact Growth
B) Provision of Services
C) Segregation of Conflicting Land Uses
D) Recreation
E) Housing Types
F) Commercial Facilities
G) Airport Approach Zones

1. RESOURCE PROTECTION

Yaupon Beach will support and enforce through its CAMA permitting capacity the State Policies and permitted uses in the Areas of Environmental Concern (AEC's). The State Policy Statements for AEC's offer protection for Yaupon Beach fragile and significant environmental resources with the CAMA permitting procedures. In accordance with those policies set forth in subchapter 7H of the State CAMA regulations, Yaupon Beach adopts the following policies concerning AEC's in its jurisdiction.

A. The Estuarine System. In recognition of the enormous economic, social, and biological values the estuarine system has for North Carolina, Yaupon Beach will promote conservation and management of the estuarine system as a whole, which includes the individual AEC's: coastal wetlands, estuarine waters, public trust areas, and estuarine shorelines. The significance of the system and its components is described in this plan under Fragile Areas.

The management objective for the system shall be to give highest priority to the protection and coordinated management of all the elements as an interrelated group of AEC's, so as to safeguard and perpetuate their biological, social, economic, and aesthetic values, and to ensure that any development which does occur in these AEC's is compatible with natural characteristics so as to minimize the likelihood of significant loss of private property and public resources.

In general, permitted land uses in the coastal wetlands, estuarine waters, and public trust areas shall be those which are water dependent. Examples of such uses may include: utility easements, docks, boat ramps, dredging, bridges and bridge approaches, revetments, bulkheads, culverts, groins, navigational aids, mooring pilings, navigational channels, simple access channels, and drainage ditches.

Land uses that are not water dependent shall not generally be permitted in coastal wetlands, estuarine waters, and public trust areas. Examples of uses that are not water dependent may include: restaurants, residences, apartments, motels, hotels, trailer parks, private roads, factories, and parking lots.

Specific policies regarding the individual AEC's of the estuarine system are stated below. In every instance, the particular location, use, and design characteristics shall be in accord with the general use standards for coastal wetlands, estuarine waters, and public trust areas as stated in subchapter 7H of the State CAMA regulations.

(1) Coastal Wetlands. Activities in the coastal wetland areas shall be restricted to those which do not significantly affect the unique and delicate balance of this resource. Suitable land uses include those giving highest priority to the protection and management of coastal wetlands, so as to safeguard and perpetuate their biological, social, economic, and aesthetic values and to establish a coordinated management system capable of conserving and utilizing coastal wetlands as a natural resource essential to the functioning of the entire estuarine system. Highest priority of use shall be allocated to the conservation of existing coastal wetlands. Second priority shall be given to those uses that require water access and cannot function elsewhere.

Acceptable land uses may include utility easements, fishing piers, and docks. Unacceptable uses may include, but would not be limited to, restaurants, businesses, residences, apartments, motels, hotels, parking lots, private roads, and highways.

(2) Estuarine Waters. In recognition of the importance of estuarine waters for the fisheries and related industries as well as aesthetic, recreation, and education, Yaupon Beach shall promote the conservation and quality of this resource. Activities in the estuarine water areas shall be restricted to those which do not permanently or significantly affect the function, cleanliness, salinity, and circulation of estuarine waters. Suitable land/water uses include those giving highest priority to the conservation and management of these areas so as to safeguard and perpetuate their biological, social, economic, and aesthetic values and to establish a coordinated management system capable of conserving and utilizing estuarine waters in order to maximize their benefits to man and the estuarine system. Highest priority of use shall be allocated to the conservation of estuarine waters and its vital components. Second priority shall be given to uses that require water access and cannot function elsewhere.

Appropriate uses may include simple access channels, structures which prevent erosion, navigation channels, boat docks, marinas, piers and mooring pilings.

Yaupon Beach will also support projects in estuarine water areas which aim to increase the productivity of these waters. Such projects include oyster reseeding programs and inlet channeling and dredging operations for the purpose of increasing the flushing action of tidal movement.

Yaupon Beach, in recognition of the shellfish areas pollution problem which closes these areas to harvesting, supports the construction of the Southeast 201 Facilities Plan.

(3) Public Trust Areas. In recognition of certain land and water areas in which the public has certain established rights and which also support valuable commercial and sports fisheries, have aesthetic value, and are resources for economic development, Yaupon Beach shall protect these rights and promote the conservation and management of public trust areas. Suitable land/water uses include those which protect public rights for navigation and recreation and those which preserve and manage the public trust areas in order to safeguard and perpetuate their biological, economic, social, and aesthetic value.

In the absence of overriding public benefit, any use which significantly interferes with the public right of navigation or other public trust rights which apply in the area shall not be allowed. Projects which would directly or indirectly block or impair existing navigation channels, increase shoreline erosion, deposit spoils below mean high tide, cause adverse water circulation patterns, violate water quality standards, or cause degredation of shellfish waters shall not be allowed.

Uses that may be allowed in public trust areas shall not be detrimental to the public trust rights and the biological and physical functions of the estuary. Examples of such uses include the development of navigational channels or drainage ditches, the use of bulkheads to prevent erosion, the building of piers, docks, or marinas.

(4) Estuarine Shoreline. CAMA defines the estuarine shoreline at Yaupon Beach as the area 75 feet landward of the estuarine waters. Yaupon Beach recognizes: (1) the close association between estuarine shorelines and adjacent estuarine waters, (2) the influence shoreline development has on the quality of estuarine life, and (3) the damaging processes of shorefront erosion and flooding to which the estuarine shoreline is subject.

Shoreline development has a profound effect on adjacent estuarine waters. Effluent from poorly placed or malfunctioning septic systems can pollute shellfish areas which represent much greater economic benefits to the town's citizens than do the residential uses of estuarine shoreline areas. In recognition of this fact, Yaupon Beach will use all available means of law to restrict the use of estuarine shoreline areas for residential purposes where there is a substantial chance of pollution occurring.

The natural process of erosion transforms shoreline areas into public trust areas. It shall be the policy of Yaupon Beach to allow this natural process to occur if life or structures are not in jeopardy.

Suitable land uses are those compatible with both the dynamic nature of estuarine shorelines and the values of the estuarine system.

Residential, commercial, and recreational land uses are all appropriate types of use along the estuarine shoreline provided that:

(a) a substantial chance of pollution occurring from the development does not exist,

(b) natural barriers to erosion are preserved and not substantially weakened or eliminated,

(c) the construction of impervious surfaces and areas not allowing natural drainage is limited to only that necessary to adequately service the development,

(d) standards of the North Carolina Sedimentation Pollution Control Act 1973 are met,

(e) development does not have a significant adverse impact on estuarine resources,

(f) development does not significantly interfere with existing public rights of access to, or use of, navigable waters or public resources.

B. Ocean Hazard Areas. In recognition of the critical nature of ocean hazard areas due to their special vulnerability to erosion and dynamic processes and their possible danger to life and property because of natural forces, Yaupon Beach supports the State Policies for Ocean Hazard Areas in Subchapter 7H of the State CAMA Regulations. The ocean hazard area designation for Yaupon Beach includes the AEC's of ocean erodible areas and high hazard flood areas. Their significance and characteristics is described in this plan under Fragile Areas.

Suitable land uses in ocean hazard areas generally are those which eliminate unreasonable danger to life and property and which achieve a balance between the financial, safety, and social factors involved in hazard area development. Ocean shoreline erosion control activities, dune establishment/stablization, and structural accessways are all acceptable types of land uses. Residential, commercial, and recreational land uses are also acceptable types of use in ocean hazard areas provided that:

(1) Development is landward of the crest of the primary dune, and where no primary dune exists, development is set back a minimum of 30 times the average annual erosion rate (140 feet at Yaupon Beach) from the first line of stable vegetation.

(2) Development does not involve the significant removal or relocation of primary or frontal dune sand or vegetation thereon.

(3) Development is consistent with minimum lot size and set back requirements established by local regulations.

(4) Development implements means and methods to mitigate or minimize adverse impacts of the project.

(5) Development of growth-inducing public facilities such as sewers, waterlines, roads, bridges, and erosion control measures is constructed only in cases where:

(a) national or state interests and public benefits are clearly overriding factors,

(b) facilities would not exacerbate existing hazards or damage natural buffers,

(c) facilities would be reasonably safe from flood and erosion related demage,

(d) facilities do not promote growth and development in ocean hazard areas.

(6) Prior to the issuance of any permit for development in the ocean hazard AEC's, there shall be a written acknowledgement from the applicant that the applicant is aware of the risks associated with development in this hazardous area.

(7) The Town of Yaupon Beach believes that the 0.7 mile of Ocean Shoreline is a valuable natural recreational resource that should be kept clean, usable and safe for public use. Therefore, it is the policy or plan of Yaupon Beach to provide appropriate beach access and parking facilities, trash receptacles, stump removal, when deemed to be hazardous to public safety, and any other beach service which would be feasible and appropriate, excepting erosion control activities.

(8) The natural process of erosion transforms shoreline areas into public trust areas. It shall be the policy of Yaupon Beach to allow this natural process to occur.

C. Natural and Cultural Resource Areas. Uncontrolled or incompatible development may result in major or irreversible damage to fragile coastal resource areas which contain environmental, natural, or cultural resources of more than local significance. In recognition of this, Yaupon Beach will seek to protect such natural systems or cultural resources; scientific, educational, or associative values; and aesthetic qualities.

Individual AEC's included in this general category are: coastal complex natural areas, coastal areas that sustain remnant species, unique coastal geologic formations, significant coastal architectural resources, and significant coastal historic architectural resources. Their description and significance is found in this plan under Fragile Areas.

In general, these resources are noted to be valuable educational, scientific, and aesthetic resources that cannot be duplicated. They may be important components in a natural system or in the broad patterns of history. Their importance serves to distinguish the designated areas as significant in relation to the coastal land scape and historical architectural and archaeological remains in the coastal zone.

In accordance with policies stated in subchapter 7H of the State CAMA regulations, Yaupon Beach will support the following actions regarding these irreplaceable resources:

(1) Protection of unique habitat conditions that are necessary to the continued survival of threatened and endangered native plants and animals and to minimize land use impacts that might jeopardize these conditions.

(2) Protection of the features of a designated coastal complex natural area in order to safeguard its biological relationships, educational and scientific values, and aesthetic qualities. Specific objectives for each of these functions shall be related to the following policy statements either singly or in combination:

(a) To protect the natural conditions or sites that function as key or unique components of coastal systems. The interactions of various life forms are the foremost concern and include sites that are necessary for the completion of life cycles, areas that function as links to other wildlife areas (wildlife corridors), and localities where the links between biological and physical environments are most fragile.

(b) To protect the identified scientific and educational values and to ensure that the site will be accessible for related study purposes.

(c) To protect the values of the designated coastal complex natural area as expressed by the local government and citizenry. These values should be related to the educational and aesthetic qualities of the feature.

(3) Conservation of coastal archaeological resources of more than local significance to history or prehistory that constitute important scientific sites, or are valuable, educational, associative, or aesthetic resources. Specific objectives for each of these functions shall be related to the following policy statements either singly or in combination:

(a) to conserve significant archaeological including their spatial and structural context and characteristics through in site preservation or scientific study,

(b) to insure that the designated archaeological resource, or the information contained therin, be preserved for and be accessible to the scientific and educational communities for related study purposes,

(c) to protect the values of the designated archaeological resource as expressed by the local government and citizenry; these values should be related to the educational, associative or aesthetic qualities of the resource.

Development may be permitted in designated fragile coastal natural or cultural resource areas provided that:

(1) The proposed design and location will cause no major or irreversible damage to the stated values of a particular resource. One or more of the following values must be considered depending upon the stated significance of the resource:

(a) Development shall preserve the values of the individual resource as it funcions as a critical component of a natural system.

(b) Development shall not adversely affect the the values of the resource as a unique scientific, associative, or educational resource.

(c) Development shall be consistent with the aesthetic values of a resource as identified by the local government and citizenery.

(2) No reasonable alternative sites are available outside the designated AEC.

(3) Reasonable mitigation measures have been considered and incorporated into the project plan. These measures shall include consultation with recognized authorities and with the Coastal Resources Commission.

(4) The project will be of equal or greater public benefit than those benefits lost or damaged through development.

2. PHYSICAL CONSTRAINTS TO DEVELOPMENT

Yaupon Beach adopts the following policies regarding physical constraints to development.

A. Septic Tank Suitability

In conformance with State and Health regulations, growth and development will not be allowed in areas where septic tanks will not function and sewer services are not available.

Some areas of Yaupon Beach contain soils which do not permit adequate percolation necessary for septic system functioning. Also, some areas have high water tables which similarily inhibit septic system functioning. These areas, as they are delineated on the soil suitability maps, will not be allowed to be developed unless sewer service is available.

B. Drainage

There are two types of conditions in certain areas of the Town, where need exists to assure that development if permitted will not contribute to danger to life or other property.

In those areas identified by the Federal Emergency Management Administration as Flood Prone Areas under the Federal Flood Insurance Program, development shall conform to standards of that program, such as no liveable areas being located lower than the identified 100 year flood elevation.

Some areas of the Town are either by nature or by earlier act of man of low-lying character, without adequate natural drainage pattern. ~~And~~ Some of these areas are flooded frequently by rains that can be expected often over the seasons. Yaupon Beach will discourage development of such areas unless there is adequate assurance by the developer for correcting any such problems of flooding or water storage, and in such manner that there is no adverse conditions created on adjoining land areas.

3. RESOURCE PRODUCTION AND MANAGEMENT

Yaupon Beach's natural resources play a vital role in its economy. Yaupon Beach's beaches and dunes are utilized for recreational uses as well as for fishing. Protection of these resources is a prime concern of Yaupon Beach. To deal with issues that involve resource production and management, Yaupon Beach adopts the following policies:

A. Productive Agricultural and Forest Lands.

Yaupon Beach contains no productive agricultural and/or forest lands. Furthermore, there will not likely be future agricultural and/or forest land use in Yaupon Beach. Therefore, no policy statements concerning this issue will be made.

B. Net Fishing
The Town will develop a policy for netting on the beach strand after the consideration of the rights of fishermen, property owners and recreational bathers.

C. Coastal and Estuarine Waters
Yaupon Beach feels that protection of Coastal and Estuarine Waters is a prime prerequisite. Habitats for shellfish in all stages of their life cycle must be preserved in order to maintain fishing as a viable economic and recreational activity. Therefore, any development which will profoundly and adversely affect Coastal and Estuarine Waters will be restricted. In the design, construction, and operation of Coastal and Estuarine development, every effort must be made to mitigate negative effects on water quality and fish habitat. These efforts will be at the owners' or operators' own expense.

D. Existing and Potential Mineral Production Areas.
Yaupon Beach contains very little known mineral deposits. Sand is the only deposit in abundance and has never been mined. There is no reasonable likelihood that it shall ever be mined. Therefore, no policy statements concerning this issue will be made.

E. Off Road Vehicles. In November, 1979, the Yaupon Beach Board of Commissioners enacted an Ordinance to protect their beach areas. In this ordinance, all vehicular traffic upon the beach areas within the corporated limits of Yaupon Beach was prohibited with the exception of those vehicles involved in emergency or rescue operations.

F. Industry. Yaupon Beach will not allow the location of industry within the town limits due to lack of industrial land.

G. Commercial Land Use. Yaupon Beach supports the development of low and medium density commercial development in those areas designated by the Yaupon Beach Zoning Ordinance.

4. PROVISIONS OF SERVICES TO DEVELOPMENT

A. Public Water Supply. All development in Yaupon Beach is presently completely serviced with water. The cost of securing this water supply is borne by the users in the form of user charges.

B. Public Sewerage System. Yaupon Beach supports the development and construction of the Southeast 201 Sewage Facilities Plan.

C. Solid Waste Disposal. Yaupon Beach recognizes its role as the provider of solid waste disposal services for its residents. It is the policy of Yaupon Beach to have this service provided in an efficient, safe, and sanitary manner. In order to carry out this role, adequate means of final disposition must always be available. Yaupon Beach presently uses the County's "Southport Landfill" on Rt. 211. Yaupon Beach supports the County's participation in regional landfill projects so long as adequate landfill sites are retained, maintained, and guaranteed.

D. Rescue Squad and Fire Protection. Yaupon Beach supports the Town's Volunteer Fire Department.

Yaupon Beach does not operate a rescue squad of its own. However, the Town does contribute funds to the rescue squad in the neighboring town of Long Beach. Yaupon Beach coordinates their volunteer fire department with Long Beach's rescue squad through Long Beach's Civil Preparedness Program.

E. Public School System. Yaupon Beach is served by a County wide School System. Yaupon Beach encourages continued and expanded multi-purpose use of these facilities for recreation and other purposes.

F. Transportation. Because of a lack of any organized transportation program, Yaupon Beach does not provide transportation for the elderly or handicapped. However, Yaupon Beach encourages the expansion of such existing programs within Brunswick County.

Yaupon Beach supports the construction of a bridge at the west portion of Oak Island to the mainland.

G. Tourism. Yaupon Beach will promote and encourage growth in its tourist industry.

5. GROWTH PATTERNS

A. Compact Growth. Yaupon Beach will encourage existing areas under development to develop fully before expansion into new areas and new developments will occur as an expansion from these fully developed areas.

In addition, Yaupon Beach will follow where applicable a policy that will allow existing areas under development and areas with public facilities to fully develop before expanding into new areas and new development will occur as an expansion from these fully developed areas.

B. Provision of Service. Urban growth and development will be directed to occur in areas where adequate services are available or planned.

C. Segregation Of Conflicting Land Uses. Spatial segregation of conflicting land uses will be encouraged.

D. Recreation. Yaupon Beach will work to provide neighborhood recreation areas. Yaupon Beach also supports the development of a multi-purpose community center. Such center could be used for indoor recreational purposes.

E. Housing Types. Yaupon Beach will encourage a variety of housing types primarily low and medium density single family permanent and seasonal residences. This policy is supported by the Yaupon Beach Zoning Ordinance.

F. Commercial Facilities. Yaupon Beach supports its commercial and recreational activity and will work to make and keep them attractive and economically sound.

G. Airport Approach Zones. A portion of Yaupon Beach is in an approach zone of the Brunswick County Airport. The Yaupon Beach Zoning Ordinance restricts building heights to 35' to prevent interference with airport traffic. Therefore, no additional policy is necessary.

C. POLICY IMPLEMENTATION

In order to carry out the policies which have been adopted by Yaupon Beach, implementation methods are needed. These methods which are developed are goals and objectives. Goals are ends toward which actions should be directed, and objectives are intermediate ends instrumental to the achievement of a goal. They are target statements achievable in the scope of the Land Use Plan.

It is important that the Town's officials and citizens support the goals and objectives enumerated therein. Only then will the Town retain the character of the policies they have adopted.

GOAL 1: Yaupon Beach will seek to prevent pollution of its coastal waters.

Objective A: Yaupon Beach will continue to guard against non-functioning septic tanks.

Strategy - 1) Strictly utilize septic tank regulations, health code requirements, and subdivision regulations to prohibit development in areas where soil is poor and erosion is prevalent.

Objective B: Yaupon Beach will seek to provide adequate sewerage disposal.

Strategy - 1) Yaupon Beach plans to maintain their role as a participant in the Southeast 201 Facilities Plan.

GOAL 2: Yaupon Beach will utilize their land use plan as a guide in local policy decisions relating to overall community development.

Objective A: Utilize the Plan as a basis for development regulations and capital facility planning and budgeting.

Objective B: Retain consistencies between the Yaupon Beach Zoning Ordinance, Subdivision Ordinance, and other land use regulations and the Land Use Plan.

Strategy 1) Encourage the development of permanent and seasonal single family development in appropriate zones.

GOAL 3: Yaupon Beach will seek to preserve and maintain their estuarine and ocean front shorelines.

Objective A: The Town will keep the beaches accessible, clean, and safe for public use.

Objective B: The Town prohibits vehicles on the beach.

Strategy 1) Stricter enforcement of the Ordinance to protect the Beach Areas of the Town of Yaupon Beach, adopted February 12, 1980.

Objective C: Yaupon Beach will seek to improve beach access points in a manner that will preserve the existing dune structure.

Strategy 1) The Town will examine methods of improving the facilities at beach access points in terms of walkovers, identification signs and parking.

GOAL 4: Yaupon Beach will seek to improve the Town's facilities.

Objective A: Plan for expanded demand on water facilities.

Strategy 1) Purchase water fron the County through existing Phase I system if demand exceeds the town wells capacity.

Objective B: The Town supports another bridge from the mainland to Oak Island at a location further to the west, as Oak Island is ten miles in length, rapidly developing, and need exists. Such a "relief valve" would further serve public safety features for fire, health, and evacuation routing, were any incident ever to occur at the Carolina Power and Light Company's Nuclear Generating Plant which is located approximately two miles from the intersection of N.C. 133 and N.C. 211, the one point through which presently all Oak Island traffic must move.

Objective C: The Town will consider expanded recreation facilities in an attempt to serve a growing seasonal and tourist population.

Strategy: 1) The Town could investigate the possibility of unbuildable oceanfront lots being donated to the Town for passive recreation (no construction). An example would be a nature trail or picnic area. Each donation offer would be considered case by case by Town officials.

PART IV

LAND CLASSIFICATION

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LAND CLASSIFICATION
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A. PURPOSE

The North Carolina Coastal Area Management Act Guidelines require that each city, town, and county located in the twenty county coastal areas develop a land classification map classifying all of the land within a given jurisdiction into one of five classes and their subdivisions. The criteria for the allocation of land into these categories are explicitly set forth in the State Guidelines, and the final adopted land classification maps for the twenty counties are combined into a coordinated, consistent expression of local policy at the large regional scale.

A land classification system for Yaupon Beach has been developed as a means of assisting in the implementation of goals, objectives, and policies. By delineating land classes on a map, local government and its citizens can specify those areas where certain policies (local, state, and federal) will apply. Although specific areas are outlined on a land classification map, it is merely a tool to help implement policies and not a strict regulatory mechanism.

The land classification system provides a framework to be used by local governments to identify the future use of all lands in the Town. The designation of land classes allows the local government to illustrate their policy decisions as to where and to what density they want growth to occur, and where natural and cultural resources will be preserved. The plans also provide the basis for development regulations and capital facility planning and budgeting.

On a regional scale, the land use plans and the land classification map are used as the basis for regional plans and in their function as regional clearinghouse for State and Federal funding programs.

On a State and Federal level, the local plans are used as a major component in the granting or denial of permits for various developments in the coastal area. State and Federal agencies must be certain that plans and decisions relating to the use of Federal or State funds are consistent with local governmental policies. Likewise, projects being undertaken by state and federal agencies themselves must be consistent with the local plans.

B. RELATIONSHIP OF LAND CLASSIFICATION MAP TO POLICY STATEMENTS

The land classification map is a graphic representation of the policy statements formulated and adopted through the citizen participation process and conference with local officials.

The 1980 Land Classification Map differs from the 1975 Map mainly in the areas of revised classification category criteria and desired development patterns.

In regard to development patterns, the classification of land reflects existing development patterns as well as the desired pattern of development as reflected in the policy statements. For example, residential development, classified as a category of Transition, is designated for those areas with existing or planned urban facilities within the next ten years, being those areas consistent with the Town's policy of compact growth.

The Transition Mixed Use Classification reflects the policy of the Town to guide commercial development in existing primarily commercially zoned corridors. This category, however, is not prohibitive to residential, institutional, or recreational development if permitted by zoning and Town policy.

Since it is the Town policy to guide commercial development among two areas, Yaupon Drive and Ocean Drive, the Transition Mixed Use is mostly in these areas. Transition Mixed Use can also be found encompassing the section of the Oak Island Country Club that is within the Town limits.

Likewise, the Conservation Classification placement corresponds to the Town policy of prohibiting development in hazard areas due to danger from flooding, severe erosion, or bearing capacity or septic tank suitability. These areas can be seen along oceanfront and estuarine shorelines and marshlands.

C. LAND CLASSES

The land classification system includes five broad classes which will be identified by all local governments. Planning units are encouraged, however, to further subdivide these broad classes into more specific land use designations. Any sub-classes which are used should be able to be aggregated back to the original five broad classes. The five general land classes are Developed, Transition, Community, Rural, and Conservation. Two of these classes are applicable to Yaupon Beach. They are Transition and Conservation.

The inclusion of a land area into a land classification category does not dictate the type of land use that will be allowed in a particular location. Several of the classes provide for and are designed to encourage a variety of land uses.

Although, as indicated above, the specific requirements of the land classification system are set forth at the State level, each jurisdiction's land classification map is developed locally and adopted by the local governing body prior to submission to the Coastal Resources Commission. As a result of this process, the land classification map represents a graphic statement of local government policy with regard to where, when and to what densities future land development will be encouraged.

1. Developed

The purpose of the Developed class is to provide for continued intensive development and redevelopment of existing cities. To be classified Developed, the area should have a minimum density of 500 dwellings per square mile or 1000 people per square mile provided with usual public services including at least water, sewer, recreational facilities, police and fire protection. This category does not apply at Yaupon Beach.

2. Transition

The purpose of the Transition class is to provide for future intensive urban development within the ensuing ten years on lands that are most suitable and that will be scheduled for provision of necessary public utilities and services. The Transition lands also provide for additional growth when additional lands in the developed class are not available or when they are severely limited for development.

The Developed and Transition classes should be the only lands under active consideration by the county or Yaupon Beach for intensive urban development requiring urban services. The area within these classes is where detailed local land use and public investment planning must occur. State and federal expenditures on projects associated with ruban development (water, sewer, urban street systems, etc.) will be guided to these areas. The Transition class is divided into two types of use: Transition Residential and Transition Mixed Use.

a. Transition Residential includes the areas with partial municipal facilities most suited for residential development.

b. Transition Mixed Use includes those areas provided with partial municipal services, yet more suitable for a wide range of activity including commercial, recreational, office, and institutional uses, often because of their location to main traffic arteries.

3. Rural

The purpose of the Rural class is to provide for agriculture, forest management, mineral extraction and other low intensity uses. Residences may be located in "Rural" areas where urban services are not required and where natural resources will be permanently impaired. This class does not apply to Yaupon Beach.

4. Conservation

The purpose of the Conservation class is to provide for effective long-term management of significant limited or irreplaceable areas. This management may be needed because of its natural, cultural, recreational, productive or scenic values. These areas should not be identified as transition lands in the future.

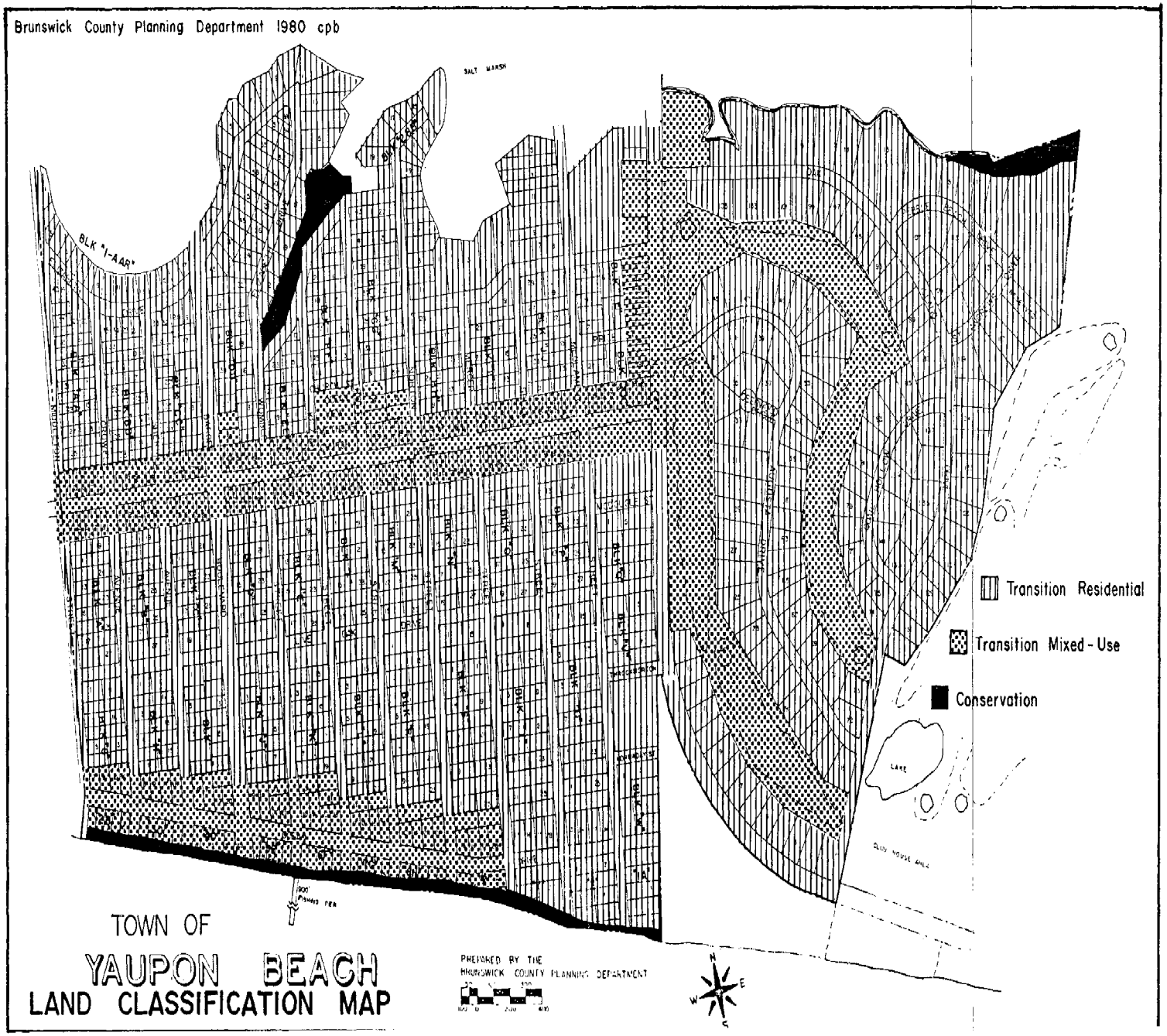
The Conservation class in Yaupon Beach is applied to lands that contain: major wetlands; essentially undeveloped shorelands that are unique, fragile, or hazardous for development or necessary wildlife habitat or areas that have a high probability for providing necessary habitat conditions.

The projected permanent and seasonal population for Yaupon Beach in 1990 is the primary input used in the preparation of the land classification map. The Transition class allocations are all directly related to the expected population level in 1990. The Conservation category is the only class which is in no way related to population, but is allocated based on completely independent criteria.

In accordance with State Guidelines requirements, the priorities for allocation to the Transition category included those areas which have experienced septic tank problems and/or face potential public health threats in terms of contamination of on-site wells or pollution of estuarine waters to which much existing residential development is adjacent. Another priority provides for inclusion of more areas where future development is expected and can be clustered through the provision of services. In Yaupon Beach these areas are also where lands are located along existing water and proposed sewer service corridors where higher density development can be expected.

The Transition-Mixed Use category was allocated to those areas meeting the above criteria but, more specifically, allowing for a variety of land uses such as residential, commercial, recreational and institutional.

In contrast to the above category, the Transition Residential Category, while meeting all the same location criteria of a transition Class, would allow only for residential development.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TOWN OF
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LAND CLASSIFICATION MAP
PREPARED BY THE
BRUNSWICK COUNTY PLANNING DEPARTMENT
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